THE MEDICAL AND PHYSICAL JOURNAL,

CONTAINING THE
EARLIEST INFORMATION ON SUBJECTS
OF
MEDICINE, SURGERY,
PHARMACY, CHEMISTRY,
AND
NATURAL HISTORY;

AND A
CRITICAL ANALYSIS OF ALL NEW BOOKS
IN THOSE
DEPARTMENTS OF LITERATURE.

CONDUCTED BY

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VOL. I.

FROM MARCH TO JULY, 1799.

LONDON:
Printed for R. PHILLIPS, No. 71, ST. PAUL'S CHURCH-YARD; and sold by all Booksellers in the United Kingdoms.
Price Twelve Shillings in Boards.
[LEWIS and Co. Printers, No. 2, Paternoster-row, Cheapside.]

[Entered at Stationers' Hall.]

PREFACE.

In forming the plan of a *Medical and Phyſical Journal*, two eſſential objects have naturally engaged the attention, and directed the efforts of its conductors.

The firſt and preliminary conſideration, was that of rendering it a reſpectable vehicle for thoſe diſcoveries, improvements, and medical caſes, which either required to be ſpeedily laid before the public, or which, not being of ſufficient importance to be publiſhed ſeparately, might, without ſuch an opportunity, be conſigned to oblivion.

The ſecond, and a motive no leſs important, was that of collecting and condenſing thoſe hints and improvements which are conſtantly iſſuing from the preſſes of Europe and America; and which, being ſcattered in voluminous and expenſive works, would be loſt to the greater number of medical practitioners.

Whether theſe two objects, ſo eſſentially involving the merits, as well as the ſucceſs of the preſent undertaking, have in ſufficient degree been attained, we ſubmit to the deciſion of the candid and unprejudiced reader.

Liberally ſupported by numerous and reſpectable correſpondents, the conductors believe that their publication has had the merit of exciting the attention of the ſtudent, and a general ſpirit of inveſtigation, among medical and phyſical enquirers, and at the ſame time it has been the means of diffuſing no little variety of inſtructive and valuable information. And as it is the primary object of a periodical work, that it ſhould become a centre of communication, the conductors congratulate themſelves on the very flattering and unexampled teſtimonies of favour they have received, by the regular and abundant ſupply of original articles, equally inſtructive and valuable.

Improvements in ſcience are naturally progreſſive: and in medicine, ſurgery, and pharmacy, this progreſs muſt be ſlow, on ac-

count of the caution with which new experiments are received, and of the great difficulty of diſtinguiſhing between fact and preconceived opinion.

The preſent volume will be found to contain, among other important articles, an accurate and comprehenſive account of one of the moſt intereſting phyſiological fact recorded in the hiſtory of medicine, viz. the perpetual means of ſuperſeding one diſeaſe by the introduction of another, and the diſcovery of the origin of contagious diſeaſes, evinced in the *Inoculation of the Cow-pox*.

The botanical and chemical articles are numerous and valuable; but we ſhall particularly mention only the elaborate and curious eſſay on the *Chemical Analyſis of Vegetables*, from the able pen of Dr. HERMBSTAEDT, of Berlin.

In the departments of anatomy and ſurgery, we have not hitherto been ſo fortunate as in the other branches of medical ſcience; yet we are not without the hope of ſupplying this deficiency in our future numbers. The hiſtory of anatomy, perhaps the moſt eſſential, if not the moſt neceſſary part of medical ſtudy, we ſhall endeavour to illuſtrate from the claſſical papers of Profeſſor SPRENGEL, of Halle; and from the diſcoveries lately made by SOEMMERING, MECKEL, WALTER, and LODER, four of the moſt ingenious foreign anatomiſts of the preſent period.

In the *practical* department of pharmacy, we, without heſitation, promiſe our readers a rich harveſt, as we are already in poſſeſſion of a conſiderable quantity of new and valuable facts, tending to improve that eſſential branch of medical practice.

In a word, the conductors are ſanctioned in the belief, that the execution of the work has not fallen ſhort of their profeſſions, and of the expectations excited, by the extraordinary extent of circulation which it has obtained—a circulation far greater than that of any former medical work publiſhed in this country.

London, June 29, 1794.

N. B. That the third volume may begin with the commencement of the year 1800, *it has been judged expedient to limit the two firſt volumes to five numbers each.*

THE

Medical and Physical Journal.

VOL. I.] MARCH, 1799. [NO. I.

An Account of the Publications and Experiments on the Cow-pox; illuſtrated by a coloured Plate, which exhibits the Appearance of the Eruption on the Arm of a Milker on the tenth Day of the Diſeaſe. The Pock on the Forefinger repreſents the Appearance of a Veſicle before Suppuration begins. *By* DR. BRADLEY.

TO trace the origin of diſeaſes which at preſent can only be propagated by contagion; or to ſuperſede one diſeaſe by inducing another, would by our forefathers have been deemed problems, the ſolution of which was too difficult to be attempted by human abilities. Our cotemporaries think otherwiſe, and perſuade themſelves that they have done more than *attempt* the ſolution. From the firſt appearance of the *ſmall-pox*, it has with reaſon been conſidered, in its natural progreſs, as one of the moſt formidable of the frequent maladies to which human beings are expoſed. SYDENHAM, by the judicious manner of treating it which he introduced, contributed greatly to diminiſh its ravages; and the practice of inoculation has ſo far reduced the number of its victims*, that where it can be employed, the ſmall-pox is ſcarcely ſo much dreaded, as the meaſles or ſcarlet fever.

There are ſome particular families, however, in which even the inoculated ſmall-pox ſeldom fails to prove a formidable diſeaſe; and we are ſorry to obſerve, that in many parts of this iſland, the prejudice againſt inoculation, eſpecially among the lower ranks of people, is far from being ſubdued; nay, even many perſons in the higher claſſes are by no means convinced, when inoculation is employed in private families, that the diſeaſe is completely under medical controul. Many are perſuaded that the ſmall-pox, even when mild, not only changes the texture of the ſkin and injures the complexion, but alſo calls the latent ſeeds of ſtruma into action. If, therefore, any means could be diſcovered of ſuperſeding it, without incurring equal danger, it might naturally be expected that many parents would be deſirous of taking advantage of them. This appeared

* Some are of opinion that inoculation, by keeping the ſmall-pox always epidemic has increaſed its fatality; but this concluſion appears to be drawn from inſufficient premiſes.

appeared to be case, in a very unequivocal manner, on the first publication of Dr. JENNER's work on the cow-pox, in June, 1798; for not only many persons of distinction, but several medical men who rank high in the profession, immediately discovered an earnest desire to have their children inoculated with the cow-pox matter as soon as possible, from the evidence of safety and efficacy in preventing the small-pox, which was contained in Dr. Jenner's book alone. This evidence we shall proceed to lay before our readers. But it is proper, in the first place, to observe, that although Dr. Jenner does not claim the discovery of the cow-pox, or the effects of it, in preventing the small pox, when taken naturally, yet he is undoubtedly intitled to all the merit and honour of having brought the subject of inoculating it, completely before the public, and directed the attention of the profession, in general, to an investigation of its truth and importance.

Dr. Jenner's book is a small quarto of seventy-five pages, illustrated by four coloured plates, representing the appearance of the cow-pox, in the human subject: price 7s. 6d. Published in London, by LAW.

The author introduces this "*Enquiry into the causes and effects of the cow-pox,*" by observing, that the deviation of man from the state in which he was originally placed by nature, seems to have proved to him a prolific source of diseases. From the love of splendor, from the indulgences of luxury, and from his fondness for amusement, he has familiarized himself with a great number of animals, which may not originally have been intended for his associates.

Those domesticated animals, he observes, do not always affect the human race directly, as rabid ones often do; but sometimes they affect each other primarily, and the modified disease becomes capable of producing a specific action on man in a secondary way, which the original could not have produced. This is exemplified in what farriers term the *grease* in the heels of horses, the matter of which applied to the cow produces the cow-pox, "and this is capable of generating a disease in the human body, which bears so strong a resemblance to the small-pox, that I think it highly probable it may be the source of that disease." Page 2.

The matter of grease is applied to cows by men who have the care of horses being employed to assist the maid servants in milking. "The disease is thus communicated to the cows, and from the cows to the dairy maids, which spreads through the farm, until most of the cattle and domestics feel the unpleasant consequences."

The

The author thus deſcribes the

Symptoms in the Cow.

" Irregular puſtules appear on the nipples of the cows, which at their firſt appearance are commonly of a paliſh blue, or rather of a colour ſomewhat approaching to livid, and are ſurrounded by an eryſipelatous inflammation."

Theſe puſtules, unleſs a timely remedy be applied, frequently degenerate into phagederic ulcers, which prove extremely troubleſome.

The animals become indiſpoſed, and the ſecretion of milk is much leſſened.

Symptoms in the Human Subject.

While the cows are in the ſtate laſt mentioned, inflamed ſpots begin to appear on different parts of the hands of the domeſtics employed in milking, and ſometimes on the wriſts, which quickly run on to ſuppuration, firſt aſſuming the appearance of the ſmall veſications produced by a burn.

Moſt commonly they appear about the joints of the fingers, and at their extremities; but whatever parts are affected, if the ſituation will admit, theſe ſuperficial ſuppurations put on a circular form, with their edges more elevated than their centre, and of a colour diſtantly approaching to blue.

Abſorption takes place, and tumours appear in each axilla. The ſyſtem becomes affected; the pulſe is quickened; and ſhiverings, general laſſitude, and pains about the loins and limbs, with vomitings, ſupervene.

The head is painful, and the patient is now and then even affected with delirium. Theſe ſymptoms, varying in their degrees of violence, generally continue from one day to three or four, leaving ulcerated ſores about the hands, which, from the ſenſibility of the parts, are very troubleſome, and commonly heal ſlowly, frequently becoming phagedenic, like thoſe from whence they ſprung.

The lips, noſtrils, eye-lids, and other parts of the body, are ſometimes affected with ſores; but theſe evidently ariſe from their being needleſsly rubbed or ſcratched with the patient's infected fingers. No eruptions on the ſkin have followed the decline of the feveriſh ſymptoms in any inſtance that has come under my inſpection, one only excepted, and in this caſe a very few appeared on the arms: they were very minute, of a vivid red colour, and ſoon died away, without advancing to maturation; ſo that I cannot determine whether they had any connection with the preceding ſymptoms. Thus the diſeaſe makes its progreſs from the horſe to the nipple of the cow, and from the cow to the human ſubject. What

renders the cow-pox virus ſo extremely ſingular is, that the perſon who has been thus affected is for ever after ſecure from the infection of the ſmall-pox. In ſupport of ſo extraordinary a fact, I ſhall lay before my reader a great number of inſtances.—Page 7.

Dr. Jenner then details twenty-three caſes, tending to prove the foregoing opinions reſpecting the origin of the cow-pox, and the impoſſibility of the ſmall-pox following it, provided the patient had the ſymptomatic fever *during the cow-pox.*

Dr. Jenner aſſures his readers, that the utmoſt care was taken to aſcertain, with the moſt ſcrupulous preciſion, that no one whoſe caſe he adduces, had gone through the ſmall-pox previous to his experiments; and as he lived in a part of the kingdom where population is comparatively thin, no riſk of inaccuracy in this particular can ariſe.

In ſeveral of the caſes adduced by Dr. Jenner, the patients had laboured under the cow-pox upwards of thirty years previous to the time when inoculated with variolous matter, in order to ſhew that the change produced in the conſtitution by the former is not leſs permanent than that by the latter.

Some of theſe caſes are intended to prove, that perſons who have had the ſmall-pox are ſuſceptible of the cow-pox only in a ſlight degree.—Page 17, &c.

At p. 21, the author obſerves, that although the cow-pox ſhields the conſtitution from the ſmall-pox, and the ſmall-pox proves a protection againſt its own future poiſon, yet it appears that the human body, as well as cows, are again and again ſuſceptible of the infectious matter of the cow-pox, as appears by the hiſtory he there adduces.

At p. 27, a caſe is related, where a farrier had taken the diſeaſe from the heels of a horſe, and could not afterwards be infected by variolus matter. The author takes this occaſion to obſerve, that ſmiths, who in the country are alſo farriers, are more difficultly infected by inoculation than other people; and aſks, "Shall we not be able now to account for this on a rational principle?" He concludes, however, immediately after, that the diſeaſe derived from the horſe is a very inferior ſecurity to that from the cow.

After ſeveral caſes, tending to evince the ſimilarity between the eruption and indiſpoſition, as well as power of perpetuating the diſeaſe, following the inſertion of vaccine and variolous matter, Dr. Jenner, at p. 41, mentions the application of a mild cauſtic, compoſed of equal parts of quick-lime and ſoap, to the inoculated part, in order to diminiſh the eryſipelatous inflammation, which often takes place upon the arm, ſoon after the patient has ſickened. He informs us that it effectually anſwered his intention, in preventing

ing the appearance of eryſipelas. Indeed, it ſeemed to do more, for in half an hour after its application, the indiſpoſition of the children ceaſed. What effect would a ſimilar treatment produce in inoculation for the ſmall-pox?

Dr. Jenner concludes his inquiry with ſome general obſervations on the certainty of the inferences which he has drawn from his caſes, his own obſervations, and thoſe of his friends. He conſiders them as demonſtrated, as far as ſuch inferences can be demonſtrated by an individual, whoſe experiments have been excluſively confined to one part of the kingdom.

We think it both natural and deſirable, that all thoſe who attempt to overturn eſtabliſhed opinions, ſhould be ſomewhat more ſanguine than the generality of their readers. This enthuſiaſm ſeems neceſſary to procure attention, as well as to excite oppoſition.

Dr. Jenner does not think the cow-pox communicable from one perſon to another by any other means than by inoculation of the matter (p. 68). He hints, that ſome chronic complaints may probably receive relief from the febrile attack of cow-pox, which is *never attended with danger*.

" Thus far," ſays Dr. Jenner, " have I proceeded in an inquiry, founded, as it muſt appear, on the baſis of experiment; in which, however, conjecture has been occaſionally admitted, in order to preſent to perſons well-ſituated for ſuch diſcuſſions, objects for a more minute inveſtigation. In the mean time, I ſhall myſelf continue to proſecute this inquiry, encouraged by the hope of its becoming eſſentially beneficial to mankind."

The next work on this ſubject which demands our attention, is an 8vo. pamphlet of 116 pages, by Dr. PEARSON, Nov. 1798, intitled, " *An Inquiry concerning the Hiſtory of the Cow-pox, principally with a view to ſuperſede and extinguiſh the Small-pox.*" Publiſhed by JOHNSON.

This inquiry is prefaced by Dr. Pearſon with the following among other obſervations, reſpecting his motives for publiſhing at that time See p. 1, 2, 3.

" In the work juſt ſpoken of, (Dr. Jenner's) ſeveral facts are related, which ſeem to let new light into the nature of the animal œconomy, and to exhibit a near proſpect of moſt important benefits in the practice of phyſic. But as ſome of theſe facts do no accord, nay, as they are at variance in eſſential particulars with thoſe to which they are neareſt related, the truth of them is rather invalidated than confirmed by analogy; hence the teſtimony of a ſingle obſerver, however experienced, and worthy to be credited, it is apprehended, is inſufficient for procuring ſuch facts a general acceptance. But granting that the facts ſhould be generally admitted

mitted without hesitation to be true, in the above work, the more judicious part of the medical profession will require the observations to be derived from much more extensive and varied experience, in order to appreciate justly, the value of the practical conclusions. Hence there appears little likelihood of improvements in practice being made, unless the subject be investigated by many inquirers, and the attention of the public at large be kept excited. Agreeably to the preceding representation, I go forward to examine the evidence of the principal facts asserted in the publication on the cow-pox, and to state what farther evidence I have derived from my own experience, and from the communication of a number of professional gentlemen, of unsuspected veracity, and undoubted accuracy."

"Perhaps it may be right to declare, that I entertain not the most distant expectation of participating the smallest share of honour, on the score of discovery of facts. The honour on this account, by the justest title, belongs exclusively to Dr. Jenner; and I would not pluck a sprig of laurel from the wreath that decorates his brow."

To the above statement of Dr. Pearson's motives for publishing, we think it right to add those considerations contained in Dr. Jenner's letter to Dr. Pearson, dated 27th Sept. 1798.

"My dear Sir,—the perusal of your proof sheets has afforded me great pleasure, both from the handsome manner in which you mention my name, and from the mass of evidence which has poured in upon you from different counties, in support of the facts which I so ardently wish to see established on a steady and durable basis." P. 99.

In order to direct the public attention to the most important objects of investigation, as well as to place them in the strongest light, Dr. Pearson has comprised the principal facts in a series of propositions, to each of which he subjoins all the information which he had then received, both from his own observation and personal inquiries, as well as the communications of his numerous correspondents: we shall lay the substance of these propositions before our readers, without adhering to the precise words.—The first proposition is to this effect. See p. 4.

1. *The cow-pox communicated in the accidental or natural way, (i. e.* from the teats of the cow to the hands of the milkers,) *renders the persons who experience the specific fever, &c. of that disease, incapable of ever receiving the small-pox.*

To the facts adduced by Dr. Jenner, in support of this important proposition, from p. 9, to 26, Dr. Pearson adds a great number of others from

from p. 5 to 37, not one of all which militates in the smallest degree against it. This uniform consent, derived from such a variety of sources, will probably with many, be deemed equivalent to demonstration. Dr. Pearson, however, does not think any practical fact of such importance sufficiently established, till we have at least a thousand well attested cases in favour of it.

From the communications contained in this part of the work, as well as several others, it appears that the cow-pox is only known in a comparatively few counties of this island.

2. The second proposition, p. 37. "*The cow-pox communicated by* INOCULATION *renders the persons who are affected with the specific fever, and peculiar local disease, unsusceptible of the small-pox.*"

This proposition involves the important fact, which, we all agree with Dr. Jenner, in wishing to see established on a steady and durable basis.

To the cases adduced by Dr. Jenner, Dr. Pearson has added a considerable number of others, from p. 37 to 42; and we can assure our readers, that every week is now teeming with experiments calculated to reduce this matter to a certainty. When the result of these can be sufficiently ascertained, we shall lose no time in laying it before the public.

3. *The matter of the cow-pox, whether taken from the brute or human body, produces the same disorder by inoculation, and with the same certainty; and when several persons have been inoculated from each other in succession, such removal from the original source of the matter, produces no change in the nature or appearance of the disease.*

This appears to be only a branch of, or appendix to, the second propositions; for unless these conditions are also proved to be true, it is obvious that the means here intended to be recommended for superseding or extinguishing the small-pox can never be extensively employed. We are therefore sorry to add, this important fact at present is only supported by the instances related by Dr. Jenner.

No experiments have yet been published, which prove that the disease may be communicated by *inoculation* from the human subject to the cow; and Dr. Pearson adds, "I apprehend that the cow-pox is the only example at present known, of a permanent specific infectious disease in the human constitution, produced by matter from a different species of animal; but it has often been conjectured, that many of the infectious diseases of the human species are derived from brutes."

Dr. Jenner suggests a caution respecting the *state* of the matter employed in inoculating, and thinks, that after it has lost its limpid quality,

its ſpecific effects alſo ceaſe. "Much precaution, ſays he, is therefore neceſſary in the progreſs of the inquiry; and this is my grand fear, that the diſcovery may fall into diſcredit from a want of that attention, in conducting the experiments, which the ſubject requires. For example, a perſon may conceive he has the cow-pox matter on his lancet, when in fact, there may be only a little putrid pus;—with this he inoculates, and excites a diſeaſe of ſome kind, but not ſuch a one as will prevent the ſmall-pox. Thus a deluſive inference would be drawn, at once hurtful to the cauſe, and particularly injurious to me. However, truth muſt appear at laſt, and from your reſearches its appearance will certainly be expected." See letter to Dr. Pearſon.

4. *The cow-pox may occur in the ſame man or brute repeatedly, if the matter of it be applied to them, though both are equally unſuſceptible of the ſmall pox.* P. 43.

This propoſition appears to be received with general ſcepticiſm by the profeſſion, merely on account of its improbability. But, ſurely, improbability is lighter than a feather, when put into the balance againſt fact and obſervation. All the circumſtances reſpecting the cow-pox, contained in the foregoing propoſitions, are no leſs improbable than this. Dr. Pearſon ſupports the fact both by arguments and additional examples, from p. 44 to 48.

5. *A perſon who has been affected with the ſmall-pox, may nevertheleſs take the cow-pox.*

The evidence in favour of this propoſition, is not at preſent deciſive, p. 49.

6. *The cow-pox cannot be communicated by any other means than by the actual contact of the matter of a puſtule.*

Some contagions appear to be conveyed in the form of gaſeous fluids, as thoſe of intermittents, ſcarlet fever, meaſles, hooping-cough, &c. Other morbific poiſons are communicated, both in the ſtate of effluvia, and in a palpable or viſible form, as the variolous poiſon, the murrain in cattle, &c. Others again in the palpable or viſible form only, as the hydrophobic, ſyphilitic, and now may be added, the poiſon of the cow-pox. The proofs of this propoſition, p. 51, 52, appear ſatisfactory.

Thus far the means of communicating the cow-pox to the human ſpecies, and of perpetuating it there, as well as the amount of the proofs of the poſſibility of ſuperſeding the ſmall-pox, by the introduction of it, have been ſubmitted to our readers. The next queſtion which demands our attention is,

7. *Is the cow-pox a ſhorter, ſafer, or pleaſanter diſeaſe, than the innoculated ſmall-pox, when conducted in the moſt approved manner?*

Unleſs

Unleſs the affirmative of this queſtion be made out to the ſatisfaction of the public in general, we conclude that the ſubject of this inquiry muſt be deemed rather curious than uſeful; as few parents would be found willing to expoſe their children to a ſevere diſeaſe, for the purpoſe of avoiding a mild one.

Dr. Jenner and Dr. Pearſon appear to be convinced that the cow-pox is the milder and ſafer of the two, as no inſtance has ever occurred of a perſon dying or even being in danger from it.

On the other hand, ſome of Dr. Pearſon's correſpondents ſeem to think that the cow-pox is far more ſevere than the inoculated ſmall-pox. Mr. Drew obſerves, p. 54, that the inoculated ſmall-pox is incomparably milder than the cow-pox. Mr. Fewſter ſays, p. 102, "I think it is a much more ſevere diſeaſe, in general, than the inoculated ſmall-pox. I do not ſee any great advantage from inoculating for the cow-pox. Inoculation for the ſmall-pox ſeems to be ſo well underſtood, that there is very little need of a ſubſtitute. It is curious, however, and may lead to other improvements." Theſe gentlemen appear to have taken up their opinion from a few ſevere caſes, and probably ſome in which the ulceration on the arms, commonly noticed, was peculiarly diſtreſſing, as they take no notice of the *ſymptomatic* fever, or any diſagreeable conſequences of the cow-pox. The arguments on the other ſide we have briefly propoſed in our introduction, and a principal one is contained in the following propoſitions, viz.

8. *The cow-pox never excites or prediſpoſes to other diſeaſes, which the ſmall-pox has too frequently been obſerved to do.*

The evidence in ſupport of this important propoſition, which is only a ſupplement to the laſt, is at preſent defective for want of time and numbers, p. 59.

9. *The cow-pox does not prevent the ſmall-pox, unleſs the conſtitution be affected with fever, &c. during the diſeaſe.*

If the reſult of this inquiry ſhould be in favour of the cow-pox, and the public in general ſhould become as deſirous of adopting it to prevent the ſmall-pox, as the city of London appeared to be laſt ſummer, it will be neceſſary, that the diagnoſtic ſymptoms of the cow-pox ſhould be accurately laid down; and that all danger of confounding it with the chicken-pox, or other cutaneous eruptions, ſhould be prevented.

After the account of the evidence on the ſubject of theſe propoſitions, which Dr. Pearſon could obtain at that time, he proceeds to make ſome obſervations on the general ſtate of the queſtion.

He

He thinks, as the information has been derived from ſo great a variety of ſources, no ſuſpicion of colluſion can ariſe; and that the plea of the ancient ſceptic, in defence of his incredulity, cannot be applied in this caſe. He was ſhewn on the walls of a temple, the votive tablets of thoſe who had eſcaped ſhipwreck in conſequence of the protection of certain deities, to whom they had addreſſed their vows, and then aſked, if he could any longer doubt the power of thoſe Gods? He ſaid, firſt let me ſee the tablets of thoſe who *periſhed* after they had implored the protection of the ſame Gods.

Since the natural ſmall-pox is known to be very often fatal, and the inoculated not oftener than once in a thouſand inſtances, as appears from the reports of Dr. Woodville and others; and ſince the *natural* cow-pox has *never* proved fatal, and the inoculated cow-pox is as much milder than the natural, as the inoculated ſmall-pox is milder than the natural; and when it is conſidered that the cow-pox is not propagated in the ſtate of effluvia; we may reaſonably conclude, "that there is great probability of the cow-pox either not proving fatal at all, or at moſt being much leſs frequently ſo, than the inoculated ſmall-pox," p. 68.

Independent of the above general inference, Dr. Pearſon thinks the "compariſon of the two diſeaſes ſhould be inſtituted with reſpect to danger under the particular circumſtances of pregnancy; age; teething; peculiar morbid ſtates; Idioſyncraſy; and certain epidemical ſtates."

After a comparative eſtimate of both diſeaſes, in all theſe reſpects, Dr. Pearſon continues ſtedfaſt in his adherence to the above concluſions.

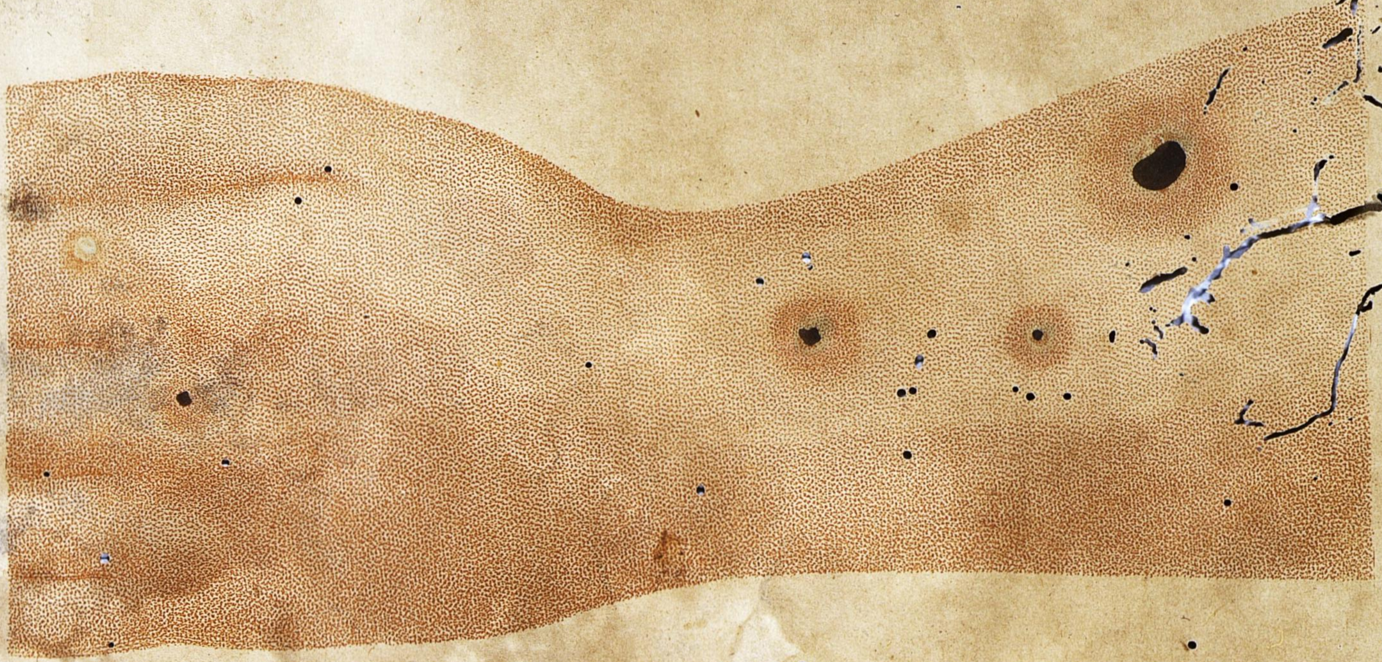
Concerning the *aetiology* of the cow-pox, Dr. Pearſon concludes againſt Dr. Jenner, that it is not derived from the greaſe in horſes, nor does he believe that ſmiths or farriers are more difficultly infected by variolous matter than other people, p. 84.

Dr. Pearſon next ſuggeſts a number of other advantages, which may hereafter be derived from a ſkilful employment of the cow-pox, ſuch as the ſuſpending for a time, and thence often preventing or curing, other epidemic or contagious diſeaſes beſides the ſmall-pox, ſuch as the influenza, hooping-cough, angina maligna, &c.

Our author concludes his work with a ſet of queries, "deſigned to guide obſervation in the acquiſition of facts belonging to the ſubject of this inquiry." The moſt important of theſe are contained in the preceding propoſitions, and for the others we muſt refer our readers to the book itſelf.

The above ſhort ſketch will enable our readers to form an idea of thoſe two works, which, whatever ſuperſtructure may hereafter be raiſed, muſt always be conſidered as having layed the foundation of it.

In



Representation of the Pustules of the Cow Pox.

Printed for R. Phillips, No. 71, St. Pauls Church Yard.

In order to continue the hiſtory of the ſubject down to the preſent time, we announce to our readers, that, about the latter end of December laſt, the cow-pox broke out among the herds of ſeveral milk-farms in the environs of London. The diſeaſe ſpread rapidly, ſo that at one farm, in the ſecond and third weeks of the following month, viz. January, more than 200 out of about 850 cows were then affected, or had lately paſſed through the diſorder. At another farm, between 60 and 70 cows out of about 350 had the diſeaſe. This epizootic contagion diſappeared rapidly after the time laſt mentioned, for, by the 4th of February, not a ſingle cow could be found in ſuch a ſtate as to afford matter for inoculation. The cow-pox in this inſtance appears to have been very mild, for no loſs was experiencd by the farmers from the deficiency of milk, as uſually happens.

At one of theſe farms two milkers only contracted the diſeaſe, and were affected very ſlightly; at the other farm only one out of 200 milkers was infected. A number of philoſophical and medical gentlemen, the Preſident of the Royal Society, and the Board of Agricultuie, &c. viſited one of the above farms, to obſerve the phænomena of the cow-pox, both among the cows and the milkers.

A ſufficient quantity of matter was collected, and a number of perſons have been inoculated of the age of two weeks and upwards. They all took the diſeaſe, and paſſed through it without being ſo ill as to be confined a ſingle day; and indeed very few of the patients made any complaint.

The ſignature of the following communication on this ſubject renders any introductory obſervations unneceſſary.

To the Editors of the Medical and Phyſical Journal.

THE following extract of a letter from an intelligent gentleman, not of the profeſſion, appearing to me to deſerve the attention of medical practitioners, and particularly of thoſe who ſeem inclined to recommend the general inoculation of the cow-pox, as a preſervative from the ſmall pox, I communicate it, with the hope that it will be inſerted in the firſt number of the Medical and Phyſical Journal.

" There is a gentleman of eminence in the law, now living in Briſtol, who has had the cow-pox twice, and being afterwards inoculated for the ſmall-pox, had it in ſo great abundance that his life for ſome time was deſpaired of: he deſcribes the cow-pox as the moſt loathſome of diſeaſes, and adds that his right arm was in a ſtate of eruption both the firſt and ſecond time from one extremity to the other; the pain was exceſſive, and his fingers ſo ſtiff he could ſcarcely move them. At a time when parents are beginning to talk ſeriouſly

of

of inoculating their children with this loathſome and uſeleſs diſeaſe, the above ſtatement may not be unacceptable. The gentleman alluded to was the ſon of a farmer who kept ſeventy cows, of which he, being then a lad, milked eighteen himſelf; they were all of them infected with this diſorder at one time; he caught it, and ſuch was the abhorrence it created in the family, that they made no uſe of the milk as long as it laſted. He never heard, nor does he believe, that this complaint in cows originates, as ſuppoſed by Dr. Jenner, from any communication with that acrid humour, called *the greaſe in horſes*.

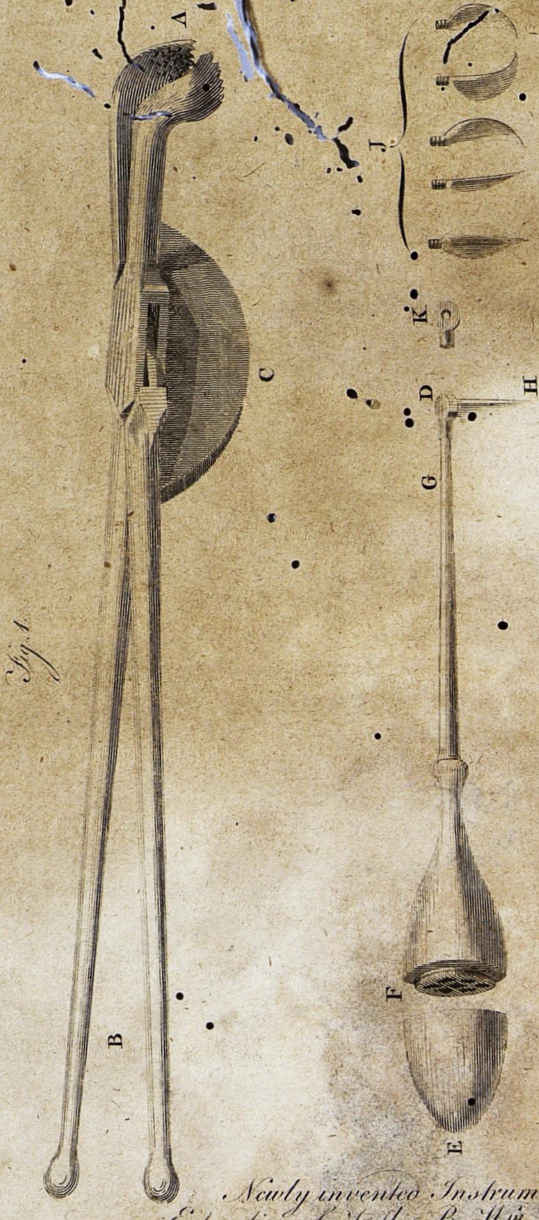
What this gentleman remarks of the loathſomeneſs of the diſeaſe, although a circumſtance entirely overlooked in Dr. Jenner's account, appears to be in itſelf a formidable objection to its introduction, even ſhould it be found to anſwer the purpoſe for which it has been recommended. But if, in one caſe, and that where the patient has been twice ſo ſeverely afflicted with it, it has already been found to be ineffectual in preſerving from the infection of the ſmall-pox, it will ſurely make us heſitate in recommending the introduction of a hitherto nearly unknown diſeaſe. At firſt ſight, indeed, it ſhould ſeem very improbable that a diſeaſe which has not the power of preſerving the conſtitution from a ſecond attack, ſhould be capable of making ſuch a change in it, as to enable it to reſiſt the infection of a ſomewhat analogous, but far more violent diſeaſe; but the facts and experiments, brought forward by Dr. Jenner, ought certainly to call forth an enquiry, from ſuch medical practitioners as are ſo ſituated that they can have it in their power to make real obſervations on the diſeaſe, and its ſuppoſed preſervative powers; but I can by no means approve of making ſuch raſh experiments upon our fellow creatures, as the inſertion by inoculation of a variety of acrid animal poiſons, the effects of which, upon the individual conſtitution, no man can, *a priori*, judge of, and who ſhall ſay that the individual only ſhall in all caſes be the ſufferer? If ſuch hazardous experiments be not diſcouraged, there is ſome reaſon to fear that to the opprobrium the profeſſion already lies under, of not being able to cure many of the exiſting diſeaſes, will be added, that of having introduced new ones.

New Bridge-ſtreet, Feb. 13, 1799. *JOHN SIMS.*

From the above general ſtatement, our readers will perceive that the great queſtion reſpecting the utility of the cow-pox is at iſſue before the public.

T. B.

Remarks



Newly invented Instrument for the Extraction of Teeth: By Wm. Dyce M.D.

Remarks on the Extraction of Teeth, with a View to lessen the Danger of that Operation; and a Description of a new Instrument for Drawing Teeth; including the Account of an improved Scarificator:—Communicated by Dr. W. Dyce, *of Aberdeen.*

[*With a Plate.*]

EVERY person conversant in the operation of surgery, knows how to extract teeth; but few, comparatively, who perform this operation, consider the danger that attends it. If I wish to draw a nail, (which having been retained for some time in a wall, and, by means of the oxygen contained in the atmosphere, converted partly into an oxyde, nearly resembles a carious tooth) I can extract it with the assistance of a common hammer, by fixing the nail between the claw; (this is easily done, as the latter adapts itself to any size, being nearly of the form of the letter V.) then forcing the handle to one side, I thereby form a fulcrum on the edge of the hammer, or the side of the claw, and by the power which the long handle or lever affords, I am enabled either to extract the nail, or perhaps to break it; but should there be the least appearance of so doing, I then immediately force the handle to the other side, and on taking another hold, the nail, in all probability, will come out complete or entire. Such is precisely the case with regard to the drawing of teeth; for whenever the pull is too great to venture upon, by changing the claw of the instrument, and fixing it on the other side, the tooth being already loosened by the first attempt, a small degree of force only will be requisite to bring it to the other side, and it will then come out along with the instrument: yet never without some injury being done to the alveolar process. To be convinced that this must be the case, we need only consider the position of the hammer in pulling the nail, as it is more completely exposed to view, both instruments being perfectly similar in their application and principles. On the first attempt to pull, we find that the nail begins to bend to one side; an additional force brings it out a little, but in what direction?—not in a straight line, but a curved one, forming a segment of the circle, which would be described by placing one leg of a compass at the fulcrum, or that part where the hammer rests, and extending the other leg to the nail; then drawing a circle by means of this known radius, the nail when extracted, would exactly correspond with a part of the circumference of the circle drawn. But as the human teeth do not bend, being different in their texture from that of the metal of which the nail is composed; and as the bed or socket in which they are lodged, is likewise different from the wood in which the nail is inclosed

inclosed, it is not to be wondered at, that one or other of them will give way, considering the short turn which the instrument must, from its construction, describe.

Let us suppose the claw placed (either outside or inside) upon the tooth, with the point of it as near to the gum as possible, the rest or fulcrum also being placed on the opposite side, as near to the jaw as may be without resting upon it, then by taking hold of the handle of the instrument in the right hand, we give it a twist, which we shall suppose brings it out, yet so that one or other of the circumstances already mentioned will take place, viz. the tooth broke and part of the fang retained in the cavity, and if so, the former complaints very often will continue, and sometimes increase beyond endurance, or if the tooth be whole, a considerable splinter of the alveolar process will be brought out along with it.

These inconveniences, not to mention the great pain and dangerous consequences that frequently ensue, have not passed unnoticed by professional men, in every country where the key instrument has been in use—an instrument too well known to require a description here, as no person capable of judging of its imperfections can be ignorant of its construction. The instrument used a century ago for the same purpose does not materially differ from the one at present in use; it no doubt has undergone a variety of forms, but the principle remains the same. Among the numerous attempts to improve it, the only one, not materially different from the old instrument, and which merits particular notice, is that proposed by Mr. Savigny, surgical instrument maker, in London, and described in the 7th volume of "*Medical Facts and Observations.*" That gentleman has certainly heard many complaints, and is himself well qualified to judge of the imperfections of the old instrument, but the improvement which he wishes to introduce, (consisting of a small cylinder or bolster on the end of the instrument, placed on the tooth as near to the process as possible, the claw being fixed to the circumference of this cylinder) by no means performs what he intends or says, viz. "the extraction of the tooth in nearly a perpendicular direction."

A trial of the instrument is scarcely necessary to prove this; a simple inspection of the plate may suffice to convince us that the end proposed is not here attained, and also that his instrument is not materially different from the common one, either in its direction, or power of action. In a late publication (the "*Philosophical Magazine*") I read with great satisfaction the announcement of a description and plate of a new German key for extracting teeth, in hopes that it would effectually supersede any attempt of mine towards improvement, or at least, that I should receive from it such additional information as would enable me perhaps to improve my own; but now, after having examined the plate and read

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the deſcription, I am concerned to find that not one improvement is even attempted. An inſtrument exactly ſimilar to the one here mentioned, I have not only ſeen many years ago uſed by others, but I have alſo actually uſed myſelf—perhaps it may be new to its recommender; it can ſcarcely be ſo, however, to an experienced medical practitioner. He ſays, "the improvements introduced into this inſtrument are ſuch as, I hope, will be found to remedy the defects complained of in all former ones; and the facility with which a tooth can be drawn by its means, will, I am ſure, render its adoption in practice univerſal, as ſoon as it ſhall be generally known." In oppoſition to which I am ſorry to obſerve, that the imperfections of this inſtrument have been too long known and felt, not to enable us to decide whether it correſpond in efficient practice to the encomiums he is pleaſed to beſtow on it. It is ſcarcely neceſſary to mention, that the only advantage which this inſtrument poſſeſſes over thoſe in common uſe, is the ſhort time that is required in changing the claw from one ſide of the tooth to the other; but this is not always neceſſary, and it is only an additional expence to the price of the inſtrument, without producing any advantage equivalent thereto. The principal objection to it, and the diſagreeable conſequences that enſue from the uſe of all other inſtruments, which have been contrived for extracting teeth, is certainly the following; the ſhort lateral turn or curve which the inſtrument deſcribes when in action:—But how is this to be remedied? We can eaſily find out imperfections, and yet the means hitherto employed for the removal of them have not been attended with that ſucceſs, which the importance of the object deſerved. All who have conſidered the common key inſtrument, or indeed any one with which we have been yet made acquainted, will agree, that the ſudden turn, deſcribed by the tooth or inſtrument while extracting, occaſions moſt of the inconveniences attending the operation; when this is known, the practitioner will naturally ſay to himſelf, the main thing required is to pull the tooth in a perpendicular direction, or rather in the direction of its axis; but when again we come to conſider how this is to be done, a queſtion occurs, what inſtrument can be uſed, which will have ſufficient power, and yet be applicable in ſo confined a ſituation? The ſolution of this ſeems inſurmountable.

Several ingenious men have attempted to maſter the difficulty, but none, as I know, have been ſucceſsful, and although I am inclined to think that what I have to propoſe will anſwer the intended purpoſe, perhaps I may be deceived; and if I ſhould, it affords me ſome conſolation to reflect that in this reſpect I am not ſingular: and I ſincerely wiſh and hope that the hint may be, by ſome perſon of ingenuity, applied with more advantage and neatneſs to the purpoſe intended.

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We have already considered the inconveniences attending the ufe of the key inftrument as commonly applied, by its fudden turning the tooth to one fide; what we have now to confider is, whether it be poffible to extract it in the direction of its axis, or in a perpendicular direction, and in what way? If we again confider how the hammer is employed in extracting a nail in another direction, we fhall at once conclude, that another inftrument, or at leaft one conftructed on different principles, will be requifite for that purpofe. If I wifh to pull the nail in a more perpendicular direction, fix it firft in the claw, then by caufing the end or folid part of the hammer to reft upon the wall, I do not force it to one fide, but pull exactly in the direction of the claw, by which means the nail is raifed nearly in a perpendicular direction, or rather in the direction of a fegment of the circle formed by the point of the claw of the hammer where the nail refts, taking the folid part or other end of it, where the fulcrum is, for the centre. In nearly a fimilar way, would I propofe teeth to be extracted; the inftrument, however, for this purpofe will be beft underftood from the annexed drawing.

A B reprefents the inftrument nearly of its proper fize, and refembles in a great meafure the common ftump forceps; attached to the forceps at C is a femi-circular piece of wood or metal, the under part of which is ftuffed and covered with leather: this femi-circular piece is fo conftructed that it may be flipped off at pleafure, and a larger or fmaller one adapted, as the cafe may require; whenever this inftrument is to be ufed, it is requifite, in the firft place, to obferve that there be no vacancy between the tooth to be extracted and the front teeth: then, having previoufly well feparated the gum from the tooth, the point of the inftrument is to be applied on each fide of the tooth as low down, and taking as firm a hold of it, as poffible; then by depreffing the handle, at the fame time taking care not to lofe hold of the tooth, the femi-circular piece refts upon the anterior teeth, and forms a fulcrum, yet it produces a very different effect at the point of the inftrument, which a common prop would do; for by means of it, the tooth when raifed, defcribes, not the circle which would be formed by taking the diftance between the point of the inftrument and the fulcrum, but one that is of a much larger radius; which of courfe comes nearer the direction wanted, the perpendicular. I am well aware, that one great objection will be offered to the ufe of this inftrument, and that is, in cafes where one, two, or three teeth are wanting, and where there is nothing to reft upon but the gum; even in fuch cafes, this inconvenience may be eafily obviated by having a flat piece of metal with a fmall handle attached to the fide; this flat piece being ftuffed in the under fide and covered with leather, fhould be

placed

placed upon the gum; then the semi-circle of the instrument rests upon it as upon the teeth, and in this way the instrument may be used with as much facility in the one case as in the other.

The force necessary to draw a tooth is not so great as one would be apt to imagine, provided the cords (if I may be allowed so to call the gum) be completely separated from the tooth, which by the bye is seldom done by any operators.—Indeed, most persons that are in the practice of extracting teeth, complain of the difficulty of dividing the gum from the tooth completely; and a very eminent writer* on this subject says, "It is a common practice to divide the gum from the tooth before it is drawn, which is attended with very little advantage, because at best it can only be *imperfectly done*;" and he adds, "But if such a separation, as can be made, saves any pain in the whole of the operation, I should certainly recommend it, and at least, in some cases, it might prevent the gum from being torn."—Now what I wish to advance on this subject is to endeavour to point out a method of performing this part of the operation *completely*; for the author above quoted certainly does not mean to affirm that it is useless, but only that the method at present in use does not answer the intention. If we examine any of the scarificators commonly used for the purpose, we shall soon be convinced, that they cannot answer the end fully, and we shall find also that they are so constructed as not to admit of being applied exactly round the tooth; for, with all the care which we can possibly exert to go round the convexity of the tooth, still there will be some part which cannot be come at. But, by substituting the following simple scarificator, I hope all these defects will be completely remedied. D. E. Fig. 2. represents the instrument I propose, of its proper size; the handle at F. unscrews, and in it is contained three, four, or six blades, or scarificators, any one of which may be applied at pleasure; for by unscrewing the stem at G. out of the knob K. the blade H. also unscrews, and another of a different form may be substituted, and can be made *dead* fast in any direction by means of the screw at G. so that it may be exactly adapted to the curvation of the tooth, and of course the gum separated more completely than by any former scarificator. I. represents blades of different forms; one form being found, on some occasions, more convenient than another, and as any of them will fit the screw at D. they may be made fast in any direction, by means of the screw in the point of the stem at G.—K. represents the small button or end-piece unscrewed from the stem, and without a blade.

Aberdeen, W. DYCE.
Jan. 25th, 1799.

* Mr. John Hunter "*On the Diseases of the Teeth,*" p. 90.

Copy of a Letter from Dr. EUSTIS, *of Boston, to a Friend in London, respecting the Use of cold Air and Water, in Fevers.*

" Dear Sir,

" YOUR favour of last Spring, accompanied with Dr. CURRIE's valuable publication on the use to which water may be applied in fevers, was doubly acceptable; as an instance of your friendship and polite attention, and as gratifying my professional taste in a very favourite point. From an experience acquired by some years practice in the army, I had learned, that exposure to cold and weather was not an evil of such frightful magnitude to persons in fevers, as is generally imagined by the inhabitants of cities, and especially those in higher life: on the contrary, of febrile patients that were lodged in barns, sheds, and other open places, a greater number recovered than of those who were thought to be better accommodated in the close rooms of dwelling-houses, and regular hospitals: and whether sick or wounded, if I could procure the area of a Dutch barn, they were considered as well lodged, and the patients very generally recovered: this must be understood in reference to the summer and the beginning of autumn. Neither the dews of night, nor any accidental wetting from showers, were deemed half so dangerous, as the poisonous air constantly generated by the sick, respired and re-respired until the patient in a close room faulters and sinks, while under the very eye of his physician, seldom adverting to the real cause.

" From the strong ideas necessarily imprinted on my mind by this experience, and observing many succesful instances of exposing to currents of air in symptoms of the small-pox, together with an early conviction that many sick die of their own atmosphere; I always have been, and am, an enthusiast for *air*.

" The application of water, and that cold, I found recommended by Dr. JACKSON, of Jamaica, who had used it in the fevers of that climate with considerable succefs; and after reading Dr. Currie's book before mentioned, I was determined to give it a fair trial.

" When the epidemic or yellow fever broke out here last summer, many were affected with a heat of body, so intense as to render painful the hand of a healthy subject when long in contact: this appears to me to have been the genuine *causus* of the antients. In one of these cases, a boy of twelve years of age, subject to delirium, occasional stupor, picking the bed-cloaths, and other symptoms commonly reputed fatal,

I resolved to make trial of the cold bath. In the morning I took him from his bed placed in a wood-shed in the yard, (to avoid the heat of the chamber), stripped him naked, had him led to the pump, (sea water not being at hand), and poured over his head and body a common pail of pump-water. On returning to his bed he found himself cooled and refreshed, and the delirium sensibly abated. The same experiment was made afterwards with sea-water, and repeated three or four times a day for several days successively, with the same good effect. Once or twice the patient, when hot and uneasy, instinctively asked for the bath; and once, when he was particularly hot, I omitted the usual precaution of wiping the water from his body, and returned him to his mattrass wet, as conceiving that the water evaporated too quickly. His fever began to abate, and after some days of a debilitated state, during which his recovery appeared doubtful, he gradually acquired strength, and now enjoys perfect health.

" In another instance of an athletic subject who, after bleeding and other evacuations, complained of an inexplicable sort of pain in the head and small of the back; relief and a cure were manifestly the result of sponging the parts occasionally with sea-water, and exposing the patient to strong currents of air. In several instances the cold bath has been attended with the most beneficial effects; as I learn from other physicians; although in some it has failed. One patient was preserved by sponging the whole body with vinegar rendered cold by cakes of ice, where this was preferred to the cold bath; the effect however is precisely similar. In my own practice, this remedy has certainly saved two, if not three patients, who would have fallen under the ordinary treatment; and it has also proved serviceable in many other cases. One fact, and that of no small importance, seems fairly established; and in this I agree with Dr. Jackson, that no injury can result from the application of cold water: at least, I never knew of such an instance. Is not the idea of *catching cold* in a *fever*, according to the usual acceptation of the phrase, an absurdity in terms? Cold is precisely the thing wanted in fevers; there is safety therefore and no danger in taking it.

" I admit that, while our epidemic prevailed, many cases occurred, in which it would have been improper to use the cold bath. In judicious hands, however, it is a most powerful remedy; in no others should *any* remedy be placed. I have met with one or two instances where the heat of the whole body was so intense, that nothing but the mechanical action of air and water on the surface could abate it; let me add, however, that in commending the free and fearless use of water, I speak of our cli-

mate in the summer season. In the winter I have used the partial bath with evident good effect."

Vale! Salve!

Boston, Nov. 21, 1798. W. EUSTIS.

To the Editors of the Medical and Physical Journal.

SUUM CUIQUE.

SIR,

AS medical disquisitions will properly enter into the plan of your proposed journal, I hope the following observations will not be deemed irrelative to its contents. I have already, in my observations on modern discoveries, endeavoured to restore to the authors of the last century their long-lost honours; and I am happy in having an opportunity of not suffering the well-earned distinction of another to be eclipsed for want of due investigation. In a work * published about a year ago, a method, or a new principle, as is imagined, is introduced for the treatment of pulmonary complaints. "This principle," says the author, (which I conceive the reader will find established in the following remarks) "is that of a *particular and strict limitation* of liquids, during the treatment of every pulmonary disease. It appears wonderful that practitioners have *never thought* of this principle, but have, on the contrary, constantly treated patients labouring under pulmonary affections in the same way as if they had laboured under similar diseases of any other parts of the body." † Catarrh is a complaint which affects the lungs more or less in different persons, and often terminates in lingering phthisis, or in direct hæmoptysis; in the former, when the scrophulous influence is present, it forms tubercles; as well as in the latter, when the tender vessels in a delicate constitution are ruptured by repeated fits of coughing. In this point of view, catarrh may be termed a pulmonary disease in the strict sense of the word.—The idea of a limited use of liquids has been long ago taken up, and the practice of it subjected to experience.—"In quantum, igitur, ' says LOWER,' ex sero sanguinis materia catarrho suppeditatur, quicquid ei pabulum detrahit, aut serum per renes præcipitat, vel per alvum derivat, vel per poros corporis dispellit, intentioni curativæ apprime satisfacit. Quare quum catarrhus primo urget, nihil magis ei supprimendo conducit, modo absque febre sit, quam ut *sitim diutissime toleremus* tridui enim vel quatridui *abstinentia a potu* plures novi a catarrho prorsus liberatos, cujus alia ratio non est, quam quod fomite subducto omnino exsciccatur, non aliter ac rivuli exarescunt ex pluviarum penuria." *(De Catarrhis.)*

The

* Observations on the Pulmonary System, &c. &c. by WILLIAM DAVIDSON.

† Introduction, p. 9.

The intention of Mr. DAVIDSON, in putting his theory in practice, is to obviate the ſtimulus of diſtention; and that of LOWER, to diminiſh the pabulum which ſupplies the increaſed ſecretion in catarrh.. Which is the better theory? Now that the humoral pathology is exploded, the theory of Lower muſt give way to the action of veſſels; but his obſervations and conſequent practice have nevertheleſs a claim to conſiderable ingenuity.

Dr. DUNCAN, of Edinburgh, has frequently treated with ſucceſs ſome caſes of chronic catarrh, on another principle, mentioned by Lower, viz. by determining to the kidnies.

The Profeſſor has given what in his opinion may be properly called a purgative diuretic, which, by leſſening the afflux of fluids upon the lungs, diminiſhes irritation, and cures, if I may be allowed the expreſſion, by derivation and revulſion. The reaſoning in Lower is preciſely ſimilar.

I am, Sir,

Your's, &c.

Bedford, January 9, 1799. G. D. YEATS.

A ſingular Variety of the Diſeaſe termed Chorea Sancti Viti: Communicated by G. C. DELARIVE, *M.D. Aſſiſtant Phyſician to the Public Diſpenſary, London.*

To the Editors of the Medical and Phyſical Journal.

HAVING now under my care a caſe of the chorea, attended with ſome remarkable circumſtances, which may perhaps throw freſh light on the nature of that diſeaſe, I take the liberty to ſend you the particulars of it; anxious as I am to co-operate with you, as far as I am able, in an undertaking which cannot fail to prove both acceptable and uſeful to all medical men.—The caſe I allude to is the following:

Richard Hodge, aged fourteen years, a ſhoe-maker, was admitted into the Diſpenſary in Carey-ſtreet, on the 7th of January. So long as he remained in an erect, or horizontal poſition of body, he was perfectly well. While ſtanding, he was able to perform any voluntary motion whatever; as to extend his arm, and reach at any thing: he could alſo walk without any lameneſs, or dragging of one of his feet; ſo that he was to all appearance in perfectly good health. But on his attempting to ſit down, his legs and thighs inſtantly became agitated with the moſt violent convulſions; the right foot was firſt affected; it was alternately outwards and inwards. Theſe motions increaſed by degrees; at firſt he fell to kicking forward

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and backward, and afterwards to ſtamping the ground, which he did with a prodigious force. The ſame agitation took place, but in a leſs violent degree, and rather later, in the left leg and thigh. Theſe convulſive motions were not attended with any pain, unleſs that ariſing from the force with which he ſtruck the ground with his feet. By long ſitting down, inſtead of abating, they increaſed to ſuch a degree that, as he declared himſelf, he would have been knocked out of his chair, had he not ariſen and put himſelf in a ſtanding poſture, in which he found himſelf perfectly at eaſe.

Though he could at any time raiſe himſelf from his ſeat, and by ſo doing put an end to theſe violent contortions, while ſitting he had very little power over his legs; he was able, indeed, to ſtretch out one of them, but he could not retain it in that poſture above one or two ſeconds; nor could he, though ever ſo willing, check theſe convulſive motions in the ſmalleſt degree. The trunk of his body, his face, and his arms, were not, however, in the leaſt affected. When laid down on his bed, he was perfectly well; when made to ſit on a chair, with his legs placed in an horizontal poſition, they became convulſed, but apparently in a leſs degree than when his feet reached the ground. While ſtanding he could keep one of his legs and thighs bent againſt his body for ſome time, without any convulſions taking place; and when laid down in his bed, he could draw up his legs, and remain in that ſituation without any inconvenience. He was very diſtinct in his ſpeech, his mind did not appear in the leaſt affected, and all his natural functions were regular. He complained bitterly of his ſituation, not as being accompanied with any pain, but with conſiderable fatigue; as he was obliged to be on his legs the whole day, and when weary to lie down on the floor.

About nine weeks prior to his admiſſion to the Diſpenſary, he had been ſeized with giddineſs, ſickneſs, and a general ſhaking of his body; his arms and legs were agitated with ſlight convulſive motions, which always became worſe on ſitting down. He took bark without any benefit, but was relieved, for the ſpace of about three days, by the uſe of ſweating-powders. He was directed to be electrified twice a day, and to take a great deal of exerciſe. Under this regimen, which he continued for about one month, he recovered ſo far as to find himſelf pretty well: at laſt, he left off electrifying, and returned to his work; a few days after he found himſelf quite unable to ſit down for any length of time; and had been in the ſituation above deſcribed a fortnight before he applied to the Diſpenſary.

On the 7th of January he was directed to take the *pil. cœrul.* j* three times a day;

* According to the New Nomenclature, called *pilulæ cupri*, each of which contains ſomewhat more than half a grain of the *cuprum ammoniacum* of the Edinb. Pharmacopœia.

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a day; on the 9th he was precisely in the same state as before, the pills producing some degree of sickness on his stomach; he continued, however, to take them, and was also directed to have a blister applied on the os sacrum. The blister rose partially, and was removed on the next day, the 10th; yet he could sit down on this day for half an hour together, without feeling any inconvenience, and on the 11th, he was able to remain in that situation for an hour or two. The blistered place was healing very fast, when, on the 12th at night, he felt some slight return of his complaint. In consequence of this he was directed to keep the blister open, by dressing it with the ung. canth. he did so, and since that time has entirely recovered, and is now perfectly well.* He is able now (January 25, 1799), to sit down for a whole morning: the blistered place, which is dressed with common cerate, is not yet healed up; he has never omitted regularly taking his pills.

G. C. DELARIVE.

Proposals for applying the Tourniquet, to restrain Arterial Hæmorrhages from the lower Extremities: by A. CARLISLE, *Surgeon to the Westminster Hospital.*

IN the practice of many chirurgical operations, and also in a variety of cases which occur through accidents or diseases, it frequently becomes an object of great importance, to suppress the bleeding from arteries, without intercepting the circulation throughout the whole limb. In such cases, the following method of applying a tourniquet to the lower extremities may be safely recommended to the practitioner. A hard roll of linen bandage, about four or five inches in width, and three in thickness, being provided, and a piece of smooth board, nine inches in length, five in width, and three quarters of an inch in thickness, with the sides and ends squared at right angles, the roller is to be placed in the ham, mid-way between the external and internal flexor tendons on the under sides of the knee joint, the leg being extended in a straight line; the piece of board is then to be placed over the roller, which is to act as a pad of compression on the popliteal artery, the length of the board running cross-ways and projecting beyond the knee-joint on each side.

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* We are informed by Dr. Du Bois, in the first Number, Vol. IV. of the Medical and Chirurgical Journal, edited by Prof. Hufeland, that the exhibition of this substance has been attended with the most beneficial effects, in an inveterate case of epilepsy. A girl, 16 years of age, who had been troubled with epileptic fits for three years, was directed to take *half a grain* daily of the cuprum ammoniacum; and after having produced nausea and vomiting, which were checked by the administration of the proper medicines, the dose was increased gradually to *five grains* daily. The patient completely recovered, having had no fits during seven weeks, whereas formerly she was regularly attacked twice and three times a week.

The girth of the tourniquet is to go round the knee above (not upon) the patella, and over the projecting ends of the board. The screw should rest on the upper part of the limb above the patella, having a pad interposed between it and the skin. This mode of compressing the popliteal artery is attended with an important advantage, it allows the arterial circulation by the lateral anastomising vessels to proceed uninterrupted; the large superficial veins also are undisturbed, so that the limb remains in the same state as if the artery alone had been tied.

It is obvious, that this mode of applying the tourniquet will not be proper at the time of amputation. In all cases however of hæmorrhages, when there is a chance of saving the limb, it will be found preferable to the total stoppage of circulation by the ordinary methods. Also in gun-shot wounds, compound fractures, secondary hæmorrhages after amputation below the knee, and in cases of necrosis, where portions of dead bone are to be removed by force, dangerous troublesome bleeding, from arteries enveloped in newly formed bone, where they cannot be secured by ligature, this mode of practice will prove advantageous.

Soho Square, Feb. 2, 1799.

On the Disease of the Eye, called Amaurosis, or Gutta Serena; extracted from an Essay of Professor ARNEMANN, *of Goettingen.*

IT is with great satisfaction we observe the progressive improvement of the medical art, and are led to admire and applaud human ingenuity, when diseases themselves are now-a-days employed to reduce the catalogue of human misery. We inoculate the small-pox, in order to deprive this dangerous enemy to the human race of its destructive power; we purposely reproduce the itch, *plica polonica,* and similar disorders, with a view to obviate more fatal maladies, and—an ARNEMANN even excites vertigo in his patients, the more effectually to extirpate this species of blindness. And yet, considering the subject in an extensive point of view, it must be confessed, that physicians have ever adopted it as a standing maxim, to remove or suppress the more important diseases, by artificially inducing others of less dangerous tendency. What else can we call diarrhœas, the effects of diaphoretics, and even those of emetics, but slight distempers created or produced for the sake of obviating greater ones? Notwithstanding this, Arnemann is, within our knowledge, unquestionably the first who conceived the original idea of strengthening and restoring its tone to the eye, by exercising it with vertiginous or rotatory commotions of the head.*

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* This effect may be produced by placing the patient on a whirling table, with his head at various distances from the centre. B.

This ingenious proposal is certainly intitled to respectable attention; neither is it improbable, that the same or a similar method might be introduced with advantage, in nervous and other affections of the head, in which the modern imitators in physic find themselves frequently baffled.

The determination of the blood towards the head, which accompanies giddiness, affords some rational grounds for this conjecture, and may well justify the attempt. An increased access of the fluids to the relaxed parts must assuredly be productive of beneficial effects, and particularly in cases where this relaxation originates in torpor. A remedy of this nature will then act properly as an exciting mean; inasmuch as the access of the fluids rouses the vital power. Here then we should enquire, whether the intervention of that circumstance (viz. the access of the fluids) offers any particular advantages in the use of this remedy?—As vertigo is, in every instance, a morbid indication in the language of physicians, it may well be considered a decisive symptom that such a remedy operates on the weak nerves, and inundates them with fluids in a preternatural degree; but we are not thence intitled to prefer the application of one *excitatory* to another which is not of the vertiginous kind; as for example, the use of soporific remedies. Dr. Arnemann, therefore, has very properly remarked, that the excitation of vertigo, if it prove to be of salutary effect, is a favourable sign; but it is not, on that account, to be considered as a co-operating cause in removing the complaint.

This distinction is the more necessary to be attended to, as the choice and application of the remedy are thereby determined. With all the aid of theory, we can find no satisfactory arguments to recommend the vertiginous remedies, as such, in the cure of the amaurosis. Their sudden, and as it were momentary, effect, indicates either a greater degree of debility, or an increased circulation of the blood; and although it may be judged a favourable symptom in the latter case, yet it is not even then by any means a material circumstance. The circulation of the blood is by these remedies only so far promoted, as they are in their nature stimulating, and not from the effect produced by them, viz. vertigo. The case would be different, if *giddiness of itself* were necessarily accompanied with increased commotions in the whole system; but this is observed to take place only in vertigo from plethora. The greater number of species of vertigo are, on the contrary, attended with a weak, unequal hysteric pulse, and generally with paleness in the face, and a sensation of cold.

These objections, to which the now proposed method of cure in amaurosis is liable in theory, are by no means intended to depreciate the just praise to which the author has an undoubted claim, for the *practical* discovery of another remedy, against the same disorder. It briefly consists of *camphor*, with

with and without belladonna; an excellent tonic and strengthening medicine to the eyes, and which has frequently done essential service, even in the dangerous species of cataract. But let it be remembered here, that camphor and belladonna can be productive of good only in cases of real debility, arising from want of excitation, or in *asthenia*; while, on the contrary, in plethoric weakness and paralysis, they must necessarily be detrimental to the patient, and aggravate rather than diminish the symptoms of the disease.

The salutary effect of camphor, administered with and without belladonna, has been strongly confirmed in the practice of the learned Professor, who appears to have prescribed it successfully, in a variety of cases. The former was directed to be taken in doses, from two to six grains, generally twice a day; the belladonna from one to two grains at a time, two doses every day.—In one particular instance of amaurosis, as described by the Professor, and which originated from external injury, other practitioners would, no doubt, have preferred the flowers of the *arnica** to either camphor or belladonna; as these flowers, by the concurrent testimony of practitioners, have acquired the reputation almost of a specific, and

* The *Arnica montana* of Linnæus, or German leopard's bane, is one of the most deleterous vegetables we are acquainted with. It has long been known and used by the common people in Germany, as an efficacious remedy for bruises and other external injuries, especially with a view to resolve and discuss extravasated and coagulated blood: hence the Germans have given it the name of *Fallkraut*, or the herb for falls and bruises: FEHR was the first who published an account of the virtues of this plant, in the 9th and 10th vols of the "*Ephemerides of the Imperial Society of Naturalists at St. Petersburg*;" in which he calls it '*Panacea lapsorum*.' But on account of the violent stimulus which this remedy excites, so that the external use of it is generally attended with great anxiety, and frequently also with vomiting, it requires much precaution in the mode of exhibiting it. In most cases it is necessary, previous to its use, to take a few ounces of blood from the patient, to open the body by means of glysters and cooling laxatives, and if the inflammation should be considerable, to postpone the administration of the medicine till the inflammatory diathesis be suppressed, or greatly mitigated.

The herb and flowers of the arnica are, to irritable habits, most conveniently given in simple infusion. One drachm of the dried flowers, or double that quantity of the leaves, is infused in one quart of cold water, and a tea-cup full of this infusion is directed to be taken every two, three, or four hours through the day; this small dose ought to be gradually increased, according to circumstances, so that from one to *three* or *four* drachms may be infused in *one* quart of water. On account of its volatile particles, this plant should never be *boiled*; and, for the same reason, the infusion ought to be made in *close vessels*. According to the opinion of the celebrated Dr. CRELL, a cold infusion of the arnica is preferable to the strongest decoction; as the water of the former, in twenty-four hours, becomes as highly coloured and penetrating as the root itself.

Perhaps the want of success, together with the different effects of this vegetable, as observed by different practitioners, is chiefly to be ascribed to their inattention, with respect to the mode of its preparation, and the manner of its exhibition.—An useful addition to the above directed infusion, are the leaves and flowers of the milfoil. *Achillea Millefolium*, Lin. which eminently possess the property of diminishing the violent, stimulating effects, generally following the use of the arnica.

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and as they have lately been employed with singular success by Dr. COLLIN of Vienna, in patients afflicted with the cataract.—We cannot, however, omit to observe in this place, that other medical practitioners, particularly Dr. RICHTER of Goettingen, and Dr. GESENIUS of Nordhausen, in Germany, have lately been much disappointed in the specific virtues these flowers are said to possess, either in cases of general paralysis, or gutta serena.

Experiments on the Analysis of Atmospherical Air; with Observations on Dr. PRIESTLEY'S *Experiments, lately read before the American Philosophical Society.*

THE system of LAVOISIER seems now so firmly established, as to stand in need of no formal vindication; the conversion of several eminent and strenuous advocates for the phlogistic doctrine, to this simple and elegant theory, has within these few years contributed not a little to its stability; yet, whilst a philosopher so distinguished in the annals of science as Dr. PRIESTLEY, still maintains the contrary opinion, it is certainly worth while to examine, upon what grounds he defends a system, now almost universally exploded.

Our atmosphere, or the air which we breathe, is composed of two permanently elastic fluids, of very different and opposite qualities; the one unfit for respiration or combustion, and therefore called azote, or azotic gas, the other possessing both these properties in a very eminent degree, and on that account denominated *pure* or *vital* air, or more justly, and in conformity to the new nomenclature, oxygen-gas.

From the intimate combination of these two aëriform fluids, in proportions which we shall state hereafter, results what we in general term common or atmospherical air.

Modern chemistry furnishes us with abundant means of determining the nature and relative proportions of these two gases, which, not being chemically united, but existing merely in a state of intimate mixture or combination, are easily separable by a substance possessing an elective attraction for either of them.—Thus, if pure mercury be exposed for some time in closed vessels filled with atmospherical air to a degree of heat nearly approaching to ebullition, a quantity of air will disappear, and the mercury be converted into a red powder, which has gained an addition of weight equal to that of the air absorbed. On examining the air in the vessels, we shall find it differing materially in properties from that which we began to experiment

experiment upon. A candle plunged into it is immediately extinguished, and a live animal introduced beneath a bell-glass filled with it, perishes instantaneously: in short, it appears to have lost all power of supporting either respiration or combustion. If the red powder formed during the process, be next submitted to examination, and exposed to a red heat in a retort, to which is adapted an apparatus for collecting such gaseous fluids as may be produced, a quantity of air will be obtained precisely equal in bulk to that which had before disappeared, at the same time that the red powder rises in vapour, and is collected in the receiver, in the form of running mercury. On subjecting this new aerial product to the same trial as the former, we shall find that, instead of extinguishing flame and destroying life, it is eminently capable of supporting both. A taper immersed in it, burns with a dazzling splendor; and red hot charcoal introduced into it, instead of consuming quickly, as in atmospherical air, burns with great rapidity, attended with a decrepitating noise and unusual production of heat and light.

It appears therefore from these experiments, that mercury, at a degree of heat approaching to ebullition, possesses the power of decomposing atmospherical air, and of combining with the pure part or oxygenous gas, which is thus separated from the other constituent part, or azote, and therefore furnishes us with a mode of determining their respective natures. To ascertain exactly the proportions in which they are combined, other means must be made use of, as in these experiments the mercury is never able entirely to separate the last portions of oxygen, partly on account of its attraction for the principle of heat, and partly on account of the mutual attraction which subsists between the two component parts of the atmosphere.

If a bell-glass be inverted over a solution of liver of sulphur, the air contained therein will suffer a diminution, which will go on during several days, and then cease. The unabsorbed part will be found to be pure azote, the oxygen alone being absorbed, and the diminution, when accurately examined, will be found to be about 27 parts in 100. So that atmospheric air is a combination of azote with oxygen gas, in the proportion of about seventy-three parts of the former to twenty-seven of the latter.

It is evident that these proportions must somewhat vary in certain situations, and be liable to alteration from local changes in the atmosphere*; yet the difference is never very great, generally not more than three or four parts in a hundred; and if we mix in the proportions here given, a quantity of azote obtained by means of liver of sulphur, with the gas expelled

* In a future Number we shall give the result of various experiments made on the atmosphere of London and its vicinity.

expelled from the red calx of mercury, a precipitate *per ſe*, we may obtain a ſpecies of air reſembling atmoſpheric or common air in every reſpect, being capable, like it, of ſupporting life and combuſtion, and affording, when ſubmitted to analyſis, preciſely ſimilar reſults.

We ſhall now advert to thoſe experiments of Dr. Prieſtley, which have given riſe to theſe obſervations, and which were inſtituted with a view of controverting the preceding ſtatement. In all caſes of what is called the phlogiſtication of air, there is, ſays Dr. Prieſtley, an emiſſion of ſomething from the ſubſtance, which the antiphlogiſtians ſuppoſe to act by ſimple abſorption. This is the ſame that has been called phlogiſton, or the principle of inflammability, which, uniting with dephlogiſticated air, forms with it part of the azote found after the proceſs.

The experiments adduced in ſupport of this opinion, and upon which he lays the greateſt ſtreſs, are made with *charred bones*, heated in atmoſpherical air; and as nothing in them is volatile, except that which conſtitutes their blackneſs, I thought, ſays Dr. Prieſtley, that they would be a convenient ſubſtance wherewith to make theſe experiments.

We ſhall extract a few of them from his paper, and then proceed with our remarks. "Having by means of a burning lens heated 140.5 grains of well-burned black bones in 28.75 ounce meaſures of air, it was reduced to 20 ounce meaſures completely phlogiſticated, without any mixture of fixed or inflammable air in it. According to this experiment, the quantity of pure air in 100 ounce meaſures of atmoſpheric air, was only 15.78 parts inſtead of 27.

"Heating 267 grains of theſe bones in 30 ounce meaſures of air, it was reduced to 25.5 ounce meaſures completely phlogiſticated, which was in the proportion of 15 parts dephlogiſticated air in 100 of atmoſpherical. In theſe experiments with bones there is ſometimes a ſmall *loſs of weight*, owing, I doubt not, to ſomething beſides phlogiſton being expelled from them by the heat of the lens, &c. I had ſimilar reſults from experiments made with ſmall poliſhed *ſteel needles*; for when they were heated ſo as only to become blue, and were not melted, they gained very little if any weight, and diminiſhed the air only in about the ſame proportion as the bones.

"I heated 200 grains of poliſhed needles in 16.75 ounce meaſures of air, when it was reduced to 13.5 meaſures completely phlogiſticated without any mixture of fixed or inflammable air in it; ſo that the diminution was in the proportion of 19.4 parts in 100.

"There was not however the ſame certainty in the experiments with the needles, and ſtill leſs with the iron, as in thoſe with the bones. *They generally gained a little weight, and diminiſhed the air more than the bones.*

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"When the needles were heated over lime water, a thick cruſt was formed upon it, but there was not ſuch a precipitation of the lime as in the experiments with the bones."

It is hardly neceſſary to have recourſe to experiment, to prove the inaccuracy of the preceding obſervations. In all the caſes of diminution of the air by the black bones, a quantity of carbonic acid was produced by the union of the carbon contained in them with the oxygen of the atmoſpherical air. The loſs in the weight of the bones, and the precipitation that took place when the experiments were made over lime water proves this fully, and it is probable, that in examining the reſiduum, Dr. Prieſtley was not ſufficiently careful to ſeparate this gas from the phlogiſticated air that remained, which would conſequently eſcape detection, if he made uſe of the nitrous air as a teſt of its purity. This opinion is ſtrengthened by the various reſults he obtained in his experiments; ſometimes, though the air was completely phlogiſticated, the diminution was only 15 parts in 100; at other times 15.75, and once 19.4.

The experiments with ſteel needles are not more concluſive, or leſs liable to objection. Carbon is one of the conſtituent parts of ſteel, and it is from this ſource that we muſt derive the carbonic acid, formed when they are heated. Thus, while one portion of the oxygen of the atmoſpherical air united with the carbon of the ſteel, to form carbonic acid, which was in part abſorbed by the water, another portion united with the iron, which was by that means partially oxydated, and received a ſmall addition of weight. The phlogiſticated air found after the proceſs is what exiſted originally in the atmoſpherical air employed.

But, ſays Dr. Prieſtley in his experiments, there is always a greater proportion of phlogiſticated air found after the proceſs, than enters, according to the antiphlogiſtians, into the compoſition of atmoſpherical air. This additional quantity, he ſuppoſes, is derived from the union of part of the oxygen gas of the atmoſpherical air, with the phlogiſton emitted from the bones, a ſuppoſition, which, however, we hope the following experiment will completely refute,

We expoſed a piece of black bone (which had been charred in an intenſe degree of heat) to the focus of a burning lens in a bell-glaſs, placed on a quickſilver bath, and half filled with pure oxygen gas, expelled by gentle heat from oxygenated muriate of potaſh; the volume of the air was increaſed by the application of heat, and after it had been ſuffered to cool, appeared ſomewhat augmented. Having withdrawn the bone that was unconſumed, a ſolution of cauſtic alkali was introduced under the bell-glaſs, which abſorbed nearly nine-tenths of the whole gas, which therefore conſiſted of carbonic acid. The remainder, on examination, was pure oxygen gas, with the exception of a ſmall

bubble

bubble of azote, which we are convinced existed in the ga[illegible] its being introduced under the bell-glass. After such unequi[illegible] proof, that when phlogisticated air is not employed, none is produced, it is certainly presumptive, that it is not produced in the other instances; and, indeed, it appears strange to us that the union of what is termed phlogiston with oxygen, should at one time generate fixed air, and at another azote, without any apparent cause for such a capricious result.

The observations which Dr. Priestley makes on the phlogistication of nitrous acid, by absorbing nitrous gas, are not a little extraordinary. They seem almost to prove, that he still does not comprehend the principles of the new theory:

"That the phlogistication of nitrous acid is owing, in some cases, to its *imbibing* something, and not always to its parting with any thing which the antiphlogistians maintain, is evident from its becoming phlogisticated by *imbibing nitrous air*. M. Fourcroy supposes, in his "*Philosophie Chymique*" that the conversion of the common nitrous acid into the phlogisticated, is always occasioned by its parting with oxygen. That this is sometimes the case, I have demonstrated in my experiments, with heating it in long glass tubes; but in the present case, it is not possible that the acid should have parted with any thing, and least of all with oxygen, since the small residuum of nitrous air is pure azote".

Let us examine into the constituent principles of nitrous acid, and see if we cannot prove this strange paradox true, that nitrous acid, by imbibing nitrous air, loses oxygen. Azote combined with oxygen, nearly in the proportion of one to two by weight, forms nitrous gas, which is by no means saturated with oxygen, since in this state it seizes it with avidity from the atmosphere. The further addition of oxygen converts it into a powerful acid. When the proportions by weight of oxygen and azote, says Lavosier, are below three parts of the former to one of the latter, the acid is red-coloured, and emits copious fumes. In this state, by the application of gentle heat, it gives out nitrous gas, and we term it in this degree of oxygenation, *nitrous acid*. When four parts by weight of oxygen are combined with one of axote, the acid is clear and colourless, more fixed in the fire than the nitrous acid, has less odour, and its constituent elements are more firmly united: this species of acid, in conformity with our nomenclature, is called nitric acid. Thus *nitric acid* is the acid of nitre surcharged with oxygen; *nitrous acid* is the acid of nitre surcharged with *azote*, or what is the same thing, *nitrous gas*, and this latter is azote, not sufficiently saturated with oxygen to possess the properties of an acid.

Nothing

[illegible] can be more easily explained, according to these principles, [illegible] in the [illegible]logistication of nitrous acid, by imbibing nitrous air. Its proportion of azote becomes thereby increased, a process which is equivalent to the subtraction of a portion of the other constituent part, or oxygen; and thus confirms the accuracy of M. Fourcroy in stating, that the phlogistication of nitrous acid is always occasioned by its parting with oxygen.

The other experiments detailed in this paper are what have been repeatedly before urged, and as often refuted. Dr. Priestley has himself proved, that air confined in wet bladders is externally affected; besides, the least tendency to putrefaction would materially affect the result of the experiment. With regard to the formation of phlogisticated air, by keeping long confined in a bottle a mixture of dephlogisticated and inflammable airs, we can only affirm, that with us it never would succeed. A mixture of these two airs, confined over mercury near two months, suffered no perceptible change; and another mixture, kept three months, was diminished about one fortieth of its original bulk; but both exploded with a degree of violence that did not appear to us at all inferior to that of newly prepared gases; and being accurately examined, did not afford the least portion of phlogisticated air. We shall conclude with observing, that these experiments of Dr. Priestley have not, upon the whole, that scrupulous exactitude, which in philosophical investigations we have a right to demand, and particularly so, in experiments instituted with a view of establishing a controverted doctrine.

Much as we admire the genius and talents of Dr. Priestley, we cannot help thinking, that his rejection of the antiphlogistic doctrine arises not solely from want of demonstrative experiments. It is difficult for a man to abandon opinions which he has been the first to promulgate—opinions founded on a series of discoveries the most brilliant, perhaps, ever made by one individual in the science of chemistry. Yet from Dr. Priestley we can expect every thing; a slight acquaintance with his works will convince any one, that he is not the slave of hypothesis; and that, influenced by facts, he has more than once recanted his own opinions, and we are not without hopes yet of hearing him join with the rest of the philosophic world, in adopting the sublime truths of the unfortunate but immortal Lavoisier.

T.

London, Feb. 6, 1799.

Amyris Gileadensis

An accurate Description of the Balm of Gilead; its Growth, and remarkable Properties, by Professor WILDENOW, *of Berlin.—With a Plate.*

THE Balm of Mecca, or as it was called by the ancients, Balm of Gilead, is one of the moſt celebrated medicines which have long been, and are ſtill employed by the Phyſicians of the Eaſt. It has preſerved its reputation, from a period prior to the birth of Chriſt,* even to the preſent day, and is conſidered by the Turks, and other oriental nations, as one of the moſt efficacious and univerſal medical remedies. To whatever circumſtance it may be aſcribed, whether from the adulterations to which it is expoſed, in paſſing through ſo many mercenary hands, before it can arrive on our ſhores, or from the monopolizing ſpirit of the Eaſtern deſpots, who carry on a profitable traffic with this highly eſteemed balm, it is but rarely imported into Europe. In its genuine ſtate it is ſent from Mecca, now its native ſoil, only to the great princes and ſovereigns of Europe, as a ſcarce and valuable preſent from the Grand Seignior. In this ſtate it is kept in ſquare leaden bottles, ornamented with a variety of whimſical figures. If it be frequently expoſed to the acceſs of freſh air, many of its volatile particles evaporate; and, gradually aſſuming a tenacious conſiſtence, it changes at length into a ſolid reſinous body.

The odour of this balm, in its original ſtate, reſembles a compound of roſemary and ſage, partaking alſo in a ſlight degree of the nature of turpentine; beſides which it partially emits the flavour of lemons and mace. The beſt ſort is clear and of a greeniſh colour; it poſſeſſes this ſingular property, that if a drop of it be depoſited on a glaſs of water, it inſtantly ſpreads over the whole ſurface and may be eaſily removed by means of a needle, having acquired the form of a tender pellicle. By this peculiar property the true Balm of Gilead may be readily diſtinguiſhed from all the

* The place where it formerly grew was Gilead, in Judea, more than 1730 years before Chriſt, or 1000 years before the Queen of Saba came to Jeruſalem; and nothing is more certain, than that the balſam-tree had been tranſplanted from Abyſſinia to Judea, and become an article of commerce there; and the place from which it originally was brought, through length of time, combined with other reaſons, came to be forgotten. This is, however, contrary to the authority of JOSEPHUS, the Jewiſh hiſtorian, who ſays, that a tree of this balm was brought to Jeruſalem by the Queen of Saba, and given, among other preſents, to Solomon, who, as we know from Scripture, was very ſtudious of all ſorts of plants, and ſkilful in the deſcription and diſtinction of them. Here it ſeems to have been cultivated, and to have thriven ſo that the place of its origin came to be forgotten.—BRUCE's *Travels*, Vol. V.

the spurious or adulterated kinds;* as it is a remarkable fact that very few of the oleaginous bodies exhibit a similar phænomenon.

The taste of this balm is bitter, astringent, and acid. Among the Eastern nations it has long been a favourite and popular remedy taken internally, in cases of diseased intestines, ulcers of the lungs, liver, and kidneys; and, in general, it is reputed an excellent diaphoretic and alexipharmic medicine. To persons who have swallowed poison, or have unfortunately been bit by serpents, scorpions, or other venomous animals, it is administered internally, as well as applied externally to the injured part. The modern Egyptians make daily use of it, during the ravages of the plague, in order to prevent or repel that destructive malady. It is further believed that the Egyptian women possess the wonderful art of rendering themselves fruitful, either by the internal use of this balm, or by perfuming and smoking their bodies with it. The beauty of the skin is also said to be not a little improved by the use of it; and the ladies of the seraglio anoint their bodies with it, after tepid bathing. A celebrated English lady, who long resided in Turkey, ventured to imitate this oriental custom; but, whether from a too prodigal use of the balm, or the improper application of it, disagreeable effects followed; her face swelled violently, the whole of the epidermis, or scarf-skin, peeled off, and her whole body broke out in blotches, and other cutaneous eruptions. Throughout the East, the balm of Mecca is to this day considered as a sovereign remedy against all diseases; and such is the unalterable veneration the Orientals entertain for it, that every part of this tree is, in some form or other, converted to medical purposes. For, besides the balsam or balm, its fruit is employed under the name of what we call in Europe *Carpobalsamum*, and the wood, stalk or trunk, under that of *Xylobalsamum*.

The ancient oriental physicians made use only of that balm which spontaneously dropped from the tree, or which exuded after incision: at present, however, there are *three* different methods of obtaining it, each of which furnishes a distinct species of the balm. The first mode of collecting it, is that

* When Sultan SELIM made the conquest of Egypt and Arabia, in 1516, three pounds was then the tribute ordered to be sent to Constantinople yearly; and this proportion is kept up to this day. One pound is due to the Governor of Cairo, one pound to the Emir Hadje, who conducts the pilgrims to Mecca, half a pound to the Bashaw of Damascus, and several smaller quantities to other officers; after which the remainder is sold or farmed out to some merchants, who, to increase the quantity, adulterate it with oil of olives, and wax, and several other mixtures, consulting only the agreement of colour, without considering the aptitude of mixing. Formerly, we were told, it was done with art; but nothing is easier detected than this fraud now.——BRUCE's *Travels*, Vol. V.

that pursued by the ancients, or by incision, which produces by far the most valuable balm; this species is never exported as an article of trade, and its consumption is chiefly confined to the principal and richest families of Mecca and Constantinople. The second mode of producing the balm depends upon boiling the branches and leaves; this sort is perfectly pellucid, and emits an agreeable fragrance. The Turkish ladies apply it externally to beautify their skin, and make their hair grow; this is the kind which the Grand Seignior sometimes sends as a present to other princes, and which is occasionally vended in the shops, as a rare and costly article. The last, and a very inferior species of the balm, is obtained by a repeated and stronger decoction of the leaves and branches: in this state it becomes much thicker, but less fragrant, and is transported to Europe by the caravans, under the different names of balm of Mecca, Gilead, Judea*, or *Opobalsamum*, signifying the juice of the tree. This kind is not much valued in the East, and is used only by the lower classes of people.

It appears from the most authentic ancient writings, that the balm of Gilead was an important article of commerce, several centuries before the Christian æra; but, notwithstanding its well-founded claim to antiquity, its native soil (the place at least of its present growth) has been discovered only by the travellers of modern times. Bruce, the Abyssinian traveller, has first pointed out the native soil of this balm, being the same as that of the myrtle, behind *Azab*, along the coast of Arabia, and extending to the Straits of *Babelmandel*. Anciently, it was believed that Egypt, Palestine, and Arabia produced this balsamic tree; but, however that might be in former times, it is certain that now it is only cultivated artificially in those countries, that it does not thrive so well there as other indigenous plants, and that the inhabitants are obliged to import annually a fresh stock of young trees, to supply the place of the decayed ones.

Ancient writers have related many marvellous and fabulous things as connected with the history of this tree. Some asserted that vipers were continually breeding under its shade; according to others, it possessed such a degree of antipathy to iron, that it sensibly trembled, on the smallest particle of iron entering into contact with it, and that on this account any incisions made in its rind must be performed with ivory, glass, or some other hard substance. Mr. Bruce, however, was an eye-witness to this incision being made with an axe, without any trembling on the part of the tree,

* The Balsam of Judea was long ago lost, when the troubles of that country withdrew the royal attention from it; yet, as late as Galen's time, it not only existed, but was growing in many places of Palestine, besides Jericho; but there is no doubt that it is now totally lost there.——*Bruce's Travels*, Vol. V.

tree, and it is also probable that similar operations have been always made with the same instrument. Other writers have maintained, that persons who anoint their bodies with this balm, have a peculiar claim to never fading beauty, and to perpetual youth.

Of more importance to the botanist than these particulars, is the knowledge of the plant itself. LINNÆUS, in his System of Plants, notices two species of the Amyris, namely the *Amyris Gileadensis*, and *Opobalsamum*, both of which are represented in general terms as trees producing this balsam. The late Dr. GLEDITSCH, of Berlin, an eminent physician and botanist, had an opportunity of examining a branch, which he found to correspond in its principal characters with the *Amyris Opobalsamum* of Linnæus. He discovered, however, in the stamina of the flower, deviations which appeared to him sufficiently important to warrant the description of it as a distinct genus; he accordingly gave it the name of *Balsamea Meccanensis*. The difference in the parts of the flower, as observed by Gleditsch, consisted in the peculiar connection of the filaments, which, according to Linnæus's mode of defining it, are consolidated with the thalamus, or receptacle; but which, in the plant examined by Gleditsch, were, in fact, connected with the bottom of the calyx.

The situation, or rather the manner in which the filaments are united to the flower, is a point of great importance in botany; for, although plants should sufficiently correspond in all other parts of the flower, they must be considered as distinct genera, if a difference prevail in this respect. It is, however, frequently a matter of difficulty to ascertain the true position of the filaments; because the boundary between the calyx and the receptacle cannot, in all instances, be accurately distinguished. After a diffuse description of the balm-tree, Linnæus informs us that the filaments are joined to the edge of the receptacle; while Gleditsch insists that this edge is a part of the calyx itself. Hence it is evident, that the plant described by the latter naturalist does not in reality form a distinct genus, but is the same as that which Linnæus has given under the name of *Amyris*.

Although it be now certain that the balm-tree falls under the generical term of *Amyris*, it still remains to be determined, whether it be the species called by Linnæus *Gileadensis*, or that called *Opobalsamum*. In this respect, also, our doubts will disappear, if we compare the historical notices which we have of the plant, with the accounts of its character given by botanists. Linnæus describes the *Amyris Gileadensis* as a plant with ternate leaves, *(foliis ternatis)* which are not indented on the edge: the *Amyris Opobalsamum*, on the contrary, he characterises as having pinnated leaves,

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(folia pinnata) the leaflets of which are without a stem. In the specimen of the plant observed by Gleditsch, were double pinnated leaves *(folia bipinnata)*. This difference in the accounts might lead us to conclude, that there existed a distinction of three different balm-trees; but if we attentively compare the manner in which different and particularly kindred plants proceed in their vegetation, these three apparently distinct plants will prove to be manifestly one and the same species. Indeed, most plants are, in their different stages of growth, subject to a variety of changes. Those which, in their infant state, usually have simple leaves, with their increasing age have them more compounded; and *vice versa*. The latter is, for instance, the case in the family of plants called by botanists *Lomentaceä*, and which includes two genera, distinguished by the names of *Gleditsia* and *Mimosa*. The well-known *Gleditsia triacanthos*, when young, has double, and sometimes triple pinnated leaves, which, as the plant advances in age, become gradually less compounded, till at length they degenerate into simple pinnated leaves. Certain species of the genus *Mimosa*, lately discovered on the coast of New Holland, and which differ from all others hitherto known with simple leaves, shew in their infancy very compounded double pinnated leaves. The *Amyris*, therefore, appears to be nearly related to the family of *Lomentaceæ*; and hence it may be reasonably conjectured, that in some of the species pertaining to the former, the leaves may, in their infant state, be more compounded than in others.

Upon comparing the delineations of this plant, as given by PROSPER ALPINUS, and by Mr. Bruce, in the fifth volume of his Travels, it seems difficult to point out any perceptible difference between them. The former, in his "*History of the plants of Egypt*," furnishes us with a plate representing a figure, the lower leaves of which are ternate, and the upper ones pinnate; these last again are compounded partly of five, partly of seven leaflets. The drawing given by Mr. Bruce is incomparably better and more accurate, although the leaves are not exhibited with uniformity, as they are sometimes ternate, and in other places pinnate. The pinnate leaves throughout consist of five leaflets only; in all other respects, the single pinnate leaves excepted, this representation of the *Amyris Gileadensis* agrees very exactly with one published by Professor VAHL, in his "*Symbolæ Botanicæ*." It should be remarked, however, that Mr. Bruce has seen a full-grown tree, and from the figure given by Alpinus, it is highly probable that he was acquainted only with young trees of this kind. FORSKAL, another botanical writer, from whose collection of plants Professor Vahl borrowed his representation of the balm-tree, had made his drawing perhaps from an old tree. The plant from which Gleditsch was enabled to furnish his account and delineation,

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was probably a very young one, and had been collected in the earlier years of its growth. Upon the whole, the dissimilar descriptions and representations of this plant given by naturalists, may be so far reconciled as to justify the conjecture, that the *Amyris Gileadensis* and the *Opobalsamum* of Linnæus are not two distinct genera or species, but that they are virtually specimens of the same plant, for which the former may serve as the generic name.

To illustrate the representation here annexed of the *Amyris*, it will be proper to accompany it with an accurate description. According to Mr. Bruce's specimen, it is a tree of an inferior size, not unlike a small cherry-tree; its heighth from the root to the crown, or expansion of the branches, being only five feet two inches, and the diameter of the trunk not exceeding five inches. The branches spread to a considerable distance around it, yet the crown, in general, is not much higher than the trunk. The root is of a red colour; the bark of a brownish grey, somewhat like the young branches of a cherry-tree. Its wood is light, and of a loose texture, so that it will not admit of polishing; and in many respects, it resembles the wood of our common willow. The tree itself presents no very agreeable appearance, as the wide-extended branches make the crown of it look stunted and flat at the top, as is frequently observed in trees on our coasts, exposed to sea-storms, or violent northerly winds.

The leaves are small, and situated close to the branches; a circumstance which gives the tree a naked appearance, although in reality it abounds in foliage*. The leaves themselves are sometimes ternate, sometimes pinnate. On the young branches, between the leaves, there appear single flowers, and occasionally two or three white flowers, with short stalks, close to each other.

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* Mr. Bruce, on the contrary, asserts, that " it is remarkable for a penury of leaves;" and likewise maintains, that " *a part of the bark is of a reddish brown*," after having said, immediately before this limitation, that " the wood of this tree is covered with a smooth *bark of blueish white*, like to a standard cherry-tree," &c.

Indeed, we need not wonder at such little inconsistencies when we read the following confused and imperfect description of the parts of fructification, which we quote *verbatim* from Mr. Bruce's *Travels*: " The flowers," says he, " are like that of the accacia-tree, white and round, only that three hang upon three filaments or stalks, where the accacia has but one. Two of these flowers fall off, and leave a single fruit; the branches that bear this are the shoots of the present year; they are of a reddish colour, and tougher than the old wood: it is these that are cut off, put into little faggots, and sent to Venice for the Theriac, when bruised or drawn by fire; and formerly these made the *Xylobalsamum*.— *Bruce's Travels*, Vol. V.

The calyx is undivided, campanulous, four times indented, and remains till the fruit is ripe. At the bottom of the calyx, cloſe to the receptacle, there appears a yellow ring, which, according to ſome writers, is the nectarium. The corolla is polypetalous, the leaflets are of a linear form, and incline towards each other. It has eight ſtamina, and the filaments are ſhorter than the corolla, capillary, ſomewhat bent, and are ſituated on the yellow ring which appears at the bottom of the calyx. The anthers are double, of a yellow colour, and oblong. The receptacle is incloſed within the calyx, and remarkably ſmall; the ſtem is ſhort and diminutive; the cicatrices or impreſſions blunt and ſquare. The fruit *(drupa)* is of a juicy nature, being about the ſize of a gooſeberry, and marked externally with four ſmall furrows. It is filledwith a tough viſcous juice, and contains a nut which incloſes one kernel of ſeed only.

Conſiderable deviations are frequently obſerved in the number of its parts; thus, for inſtance, the calyx has been found five times indented; alſo, five petals or leaflets have been noticed, and ten ſtamina.

Explanation of the Plate.

(A) A ſmall branch of the *Amyris Gileadenſis*, nearly in its natural ſize. (B) The flower ſomewhat magnified. (C) A ſpecimen of a branch with fruit in its unripe ſtate. (D) The Calyx. (E) The fruit in its narural ſize, with tranſverſe and longitudinal ſections.

On the practical Advantages of the Uſe of Flannel worn next the Skin; by Dr. Willich.

In conformity with the invitation held out in the Proſpectus of this Journal, which is open to the inveſtigation of every ſubject, in the various departments of medical ſcience, if the matter under conſideration be ſufficiently intereſting and deſerving of notice, I preſume to inſert the following explanation.—I conceive it a duty incumbent on every author, to take the earlieſt opportunity to correct any ambiguities, or prevent miſconſtructions, to which any doctrines or ſtatements in his publications may be liable, eſpecially if the ſubject in queſtion relate to matters of practical importance.

In my late work, intitled, "*Lectures on Diet and Regimen*," I have decidedly oppoſed and controverted the novel opinion, reſpecting *the uſe of flannel next the ſkin*, which has been maintained and ſpread, even in familiar life, among thoſe who are hardly competent to judge for themſelves, but implicitly rely on the advice of their medical friends. To ſuch, therefore, and particularly the readers of my book beforementioned, I ſhall diſcharge an obligation which is no more than ſtrictly due, by placing the

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diſpute, or difference of opinion, on this popular ſubject, in ſuch a point of view, as will enable them to deduce a juſt concluſion, whether or not the wearing of flannel, under particular circumſtances, be uſeful or detrimental to health.

Having obſerved in my "*Lectures,*" p. 235, in the ſection "*On the immediate Covering of the Skin,*" that "not only analogy, but experience likewiſe proves, that wool worn next the ſkin has indiſputable advantages over all other ſubſtances;" and having ſtated the reaſons for which it ſtands ſo eminently recommended as a part of under-dreſs, together with the good effects, and ſuperior advantages with which the uſe of it is *generally* attended, I have proceeded to expreſs my ſurpriſe (p. 237), "that any individual, however great his reputation, ſhould be whimſical or hardy enough to diſpute matters of fact, merely with a view to eſtabliſh a favourite hypotheſis."

Not inclined to retract a ſingle word of this bold aſſertion, although I profeſs the greateſt veneration for the talents, learning and genius ſo happily blended in the author of "*Zoonomia,*" I ſhall content myſelf (and herein, I truſt, ſatisfy my readers) with laying down the *conditions* and *modifications*, in what relates to the uſe of this ſubſtance, as nearly as poſſible, in the words of the celebrated HUFELAND, the author of the "*Art of prolonging Human Life;*" a valuable work, of which the ſecond edition has lately appeared at Jena, with conſiderable additions and improvements.

As I have in no part of my Lectures recommended the uſe of flannel to children or young perſons, I do not heſitate candidly to quote this learned writer, even though his opinion ſhould appear to vary in ſome meaſure from my own: for, as every medical man claims the privilege of determining agreeably to the notions formed by his reaſon and experience, I may be permitted to differ from others, where I cannot pay homage to theory alone, and where I conceive there is a ſufficient number of facts to warrant the juſtice of my concluſions. Having previouſly deſcribed the general properties and effects of flannel, Mr. Hufeland expreſſes himſelf to the following purport: "Upon the whole, I am of opinion, that it would not be adviſable, at leaſt to children and young perſons, *univerſally* to adopt a woollen texture for the covering of the ſkin; particularly as this dreſs requires a more frequent change to promote cleanlineſs, and conſequently would produce a contrary effect among the lower claſſes of people.* It is, however, a ſalutary dreſs to

* To anſwer this objection ſatisfactorily, I beg leave to refer the reader to my arguments on the ſame ſubject, diſcuſſed page 238, and foll. of the "*Lectures on Diet and Regimen.*"
W.

to those who, in all probability, have commenced the second half of their life; to all cold and phlegmatic temperaments; to all who lead a sedentary life; to individuals subject to catarrhs or frequent colds, gout, diarrhœa, and partial congestions of the blood; to all nervous patients and convalescents from severe chronic disorders; to persons who are too susceptible of the impressions of the atmosphere; and lastly, in such climates and pursuits of life as are exposed to frequent and sudden changes of air. It is, on the contrary, hurtful* to those, without exception, who are already troubled with violent perspiration, or with cutaneous eruptions, and who cannot afford frequently to change their under dress. Woollen drawers are highly pernicious to young persons."—And even in those cases where flannel next the skin is obviously conducive to health, Mr. Hufeland recommends only such a texture of wool as is sufficiently porous, and neither too rough nor too thick. Coarse woollen stockings in winter, and thin ones in summer, ought, in his opinion, to be more generally worn. Those persons, lastly, who are in a good state of health, and have no particular reason for wearing flannel, or whose skin is too irritable, may find it, he thinks, beneficial to wear a cloth fabricated of a mixed texture of cotton and linen.

London, Feb. 2, 1799. A. F. M. WILLICH.

Remarks on the Influence of the Brunonian System on the Practice of Medicine; by Professor HUFELAND.

IN the fourth volume of "*The Journal exhibiting the Practice of Medicine and Surgery,*" published at Jena, we observe a curious essay, designed as an answer to the following singular and interesting question:—"What influence has the system of JOHN BROWN hitherto had on the practice of medicine? and in what particular respects has it changed, improved, or vitiated the medical art?" The ingenious author of this essay, Professor HUFELAND, (who is likewise the Editor of the Journal above-mentioned) admits, in concurrence with many other eminent physicians in Germany and England, that the inventor of this doctrine was a man of considerable genius, and that his theory is replete with novel and excellent ideas; notwithstanding which, it by no means merits the name of a *system*, as it every where presents evident chasms and defects. The *constituent* part of medicine, as an art, must necessarily rest on the observation of facts, or what we call experience; theory is of service merely in

* Mr. H. doubtless meant to say, that it is *then only* hurtful, if none of the external conditions before specified take place; which again render the wearing of flannel salutary to the individual, even in cases apparently dubious.

in the *regulative* part of it, and must invariably accommodate itself to fresh modifications and changes, whenever experience shall pronounce them necessary. The Brunonian doctrine appears very plausible and consistent in theory, but is liable to this material objection, that it frequently and essentially disagrees with matters of fact and experience. The principal point, therefore, to be considered is, whether the Brunonian mode of representing subjects in medicine, has a tendency to facilitate the acquisition of medical knowledge, and to improve the method of curing diseases?—The learned Professor seems inclined to put a negative on this question; and observes, that Brown's division of diseases into *sthenic* and *asthenic*, is only *apparently* simple and easy, but that it is in *reality* a matter of considerable doubt and difficulty to distinguish them from one another with precision; and there are certain distempers, in which it is almost impossible to trace and discover the symptoms of the sthenic and asthenic constitution. It is further difficult to establish clearly, where there is *direct*, and where there is *indirect* debility; to ascertain to what degree this subsists in the body, and determine what species of stimulus ought to be applied to it. In our opinion, medicine can derive little *positive* advantage from the multiplication of theories, however ingeniously framed, if they be not founded on the basis of actual observation and experience. Instead of indulging the modern rage for *generalization*, we ought previously to collect a sufficient number of analogous facts; and, being in possession of these, we might gradually and cautiously venture to reduce them to particular classes, orders, &c. But as this result presupposes long and attentive investigation, by a cool, persevering, and unprejudiced mind, (circumstances and qualifications but rarely united in *one* individual) there is little hope of seeing a *theory* of medicine, or a *System of Nosology* established, which in the present progressive state of medical and physical science, will be found of such unperishable materials, as to stand the test of ages.

Additional Remarks on the preceding Subject, by a Jena Reviewer.

BROWN was unquestionably a man of an enterprising temper, and peculiar boldness: a man of genius; one who thought freely for himself, disregarding mere authorities and opinions, however sanctioned by the venerable *imprimatur* of time. Had he been so fortunate, by a favourable concurrence of circumstances, as to establish the stability of his principles on extensive observation and clinical experience, he would indeed have rendered essential services to medicine, and attained the praise of uncommon merit in this science. But whoever is anxious to obtain celebrity,

and

and to contribute *real* affiftance to the *practice of the healing art*, will find it no eafy matter to accomplifh this defirable end by folitary difquifitions in his ftudy-room: he muft range through a circle of patients; examine and confult with them; and thefe, again in like manner, with him. Old and experienced practitioners will readily difcover whether the author or founder of a fyftem be in fact a ftranger to the difeafes he attempts to define or arrange; if in only a few inftances they efpy his weak fide, and find his account of the progrefs of a difeafe inconfiftent with the path of Nature, his pretenfions are inftantly decried, and his whole fyftem is placed on the condemned lift. Brown was a *luxuriant genius*, and his medical eccentricities frequently exhibit fomewhat of a marvellous, if not even a monftrous appearance. We may, however, eafily underftand how it happens that this *foi-difant* fyftem is now fo fondly careffed and honoured with approbation, efpecially by young practitioners, before they can have treafured up a fund of original experience; as, thus fortified, they approach the bed of the patient with a certain confcious air of veteran firmnefs. In the aphoriftical doctrines of Bruno, they find every fubject of this complicated art treated in a much eafier, more concife, and convenient manner, than in the old-ftanding authorities of former ages; inftead of ftudying, in well-arranged elementary treatifes, the nature of every difeafe, according to its different ftages, fymptoms, &c. and making themfelves acquainted with methods of cure adapted to the particular ftate of the diforder, as well as the peculiar conftitution, temperament, and external conditions of the patient; they congratulate themfelves that fuch diffufenefs is *now* perfectly unneceffary, innumerable difeafes being claffed under one head, and treated in a fimilar manner, in this comprehenfive mode of claffification; for inftance, in hæmoptyfis, as well as in diarrhœa, hyfterics, &c. &c. Brown indifcriminately recommends the ufe of chalybeats, rum, opium, and the like. This, furely, will be more readily underftood in theory, and followed in practice, than the old elaborate, or fay pedantic diffufenefs, by which the ftudy of medicine is rendered difficult to the tyro, and the practice of it puzzling, if not baffling to the beginner.

On the Effects of Abftinence on the Approach of acute Difeafes; abftracted from the original Papers of Dr. E. Miller, *of New York.*

THE following fact feems to deferve more attention than it commonly obtains:—In a diftrict of the United States, diftinguifhed for the prevalence of the epidemic difeafes of fummer and autumn, it is often afferted

by

by sensible and acute observers, that they are accustomed to obviate the attack of fevers, apparently approaching, by *rigid abstinence* from food. This abstinence, begun as soon as they perceive the feelings of indisposition, usually known to be the fore-runners of fever, is continued till such feelings cease, till appetite be restored, and generally, indeed, till the calls of hunger become importunate. On different occasions, this process is of various duration, sometimes twenty-four, thirty-six, and even forty-eight hours, according to the nature and exigencies of the case. The success of this regimen is commended by such as have experienced it, in stronger terms than would be proper here to repeat, and perhaps stronger than the reality of the case can justify.

Although the observation abovementioned comes, in the present instance, from a popular source, the effects of abstinence, in obviating the approach of acute diseases, have not escaped the notice of the most eminent physicians. In the writings of HIPPOCRATES, we perceive the strong impression he had received on the subject. SYDENHAM is still more explicit. In his account of the continued fever of the years 1673, 1674, and 1675, considered by Dr. CULLEN as a variety of synocha, or inflammatory fever, it is asserted that he often cured this, as well as other kinds of fever, in the beginning, merely by directing diluents, and prohibiting every kind of aliment. Thus he relieved his children and intimate friends, (to use his own words) *by making them fast strictly for two or three days.* And, besides medical authority, we may also adduce, in favour of this mode of preventing diseases, the recommendation and practice of many men of letters, who have adopted it with the greatest zeal. The sedentary lives of such persons, diminishing keenness of appetite, and augmenting the burden of repletion, and their experience of higher intellectual power in a somewhat diminished degree of bodily vigour, may perhaps account for their attachment to this remedy.

After having pointed out the great advantages of total abstinence, at the commencement of acute diseases; explained the important functions of the stomach in the animal system; and detailed with precision the particular states of the body, as well as the various cases in which abstinence is attended with beneficial effects, the author concludes this valuable paper with the following pertinent and ingenious remarks:—

"If the art of preserving health and prolonging life chiefly consist in a frugal and sparing use of stimuli, and adapting them with caution and skill to the fluctuating circumstances of the vital principle, we shall surely find still

still stronger motives to apply this doctrine at the approach, and in the treatment of diseases, when noxious powers of such preternatural violence invade the body, baffle every remedy, and stimulate it to death. The regulation of this vital principle, here denominated excitability, the preservation of it when present, and its restoration when deficient, the restraint of excitement within the bounds of moderation, the prohibition of all wasteful and undermining excesses, will probably hereafter, at some more enlightened æra of medicine, form a system of rules for the management of health, and the prevention of disease, for the enjoyment of sense, and the refinement of intellect, which, instead of the present feverish dream of human life, will present a consummation of improvement and happiness, which we now ascribe to superior beings.

"I have thus undertaken to examine a noted popular observation, to inquire into its truth, and to demonstrate its consistency with the most established principles of the animal œconomy. If I do not mistake, it has been proved, that abstinence will be often a complete, generally an useful, and almost always *a safe means of obviating the approach of acute diseases.* And, in a word, if it were possible to offer to mankind a maxim of universal application to the treatment of incipient fevers, in all their variations and circumstances, I should be inclined to hazard the following aphorism: *When symptoms, denoting the approach of acute diseases, are discovered, abstain, for a proper length of time, from all aliment.*"

Chemical Remarks on Manures:—By Dr. S. L. Mitchill, *of New York.*

IN an ingenious and elaborate essay, published in the "*Medical Repository,*" of New York, the author has endeavoured to prove, how nearly *physic* and *farming* are allied to each other. He premised an inquiry into the nature of *septon* (azote), and its relation to other bodies; and after having stated the opinions entertained in different ages with respect to this acid, which at one time was termed *acidum primogenium,* at another *acidum universale, acidum vagum, acidum atmosphericum, acidum æreum, &c. &c.* Dr. Mitchill directs his inquiry into the particular phænomena, which a country rendered unhealthy by its uncommon fertility, or a dung-heap, on account of its richness, presents to the mind; and, in order to illustrate the history of azote, or the principle of putrefaction in manures, he gives a list of forms or combinations, in one or the other of which this principle exists, either in a pure or combined state. Our limits not permitting us to transcribe

ſcribe the particulars of this intereſting diſpoſition, in which the Doctor enumerates the principal compoſitions of *ſepton* with other bodies which relate to agriculture, and accompanies each of them with remarks tending to illuſtrate their reſpective value, as well as their relation to other ſubſtances, we ſhall extract only the following:

"The acid properties of ſome manures, and the alkaline or abſorbent nature of others, highly deſerve the conſideration of agriculturiſts. Without paying attention to the action of the former, of theſe upon the latter, the formation of manures, and their operation upon plants, cannot be underſtood. Theſe might eaſily be reduced to a ſmall table, and their affinities traced.

Acids commonly preſent in Manures.	*Alkalies very common in Manures.*
Septic, or nitrous acid.	*Pot-Aſh*, or *vegetable* fixed alkali, very common.
Carbonic acid, or fixed air, both very common.	*Soda*, or mineral alkali.
Sulphuric acid, ſometimes.	*Ammoniac*, or volatile alkali, now and then.
Muriatic acid, very frequent in the neighbourhood of the ocean, and abounding on farms, where much ſalt-fodder is conſumed.	*Lime*, or calcareous earth, very common indeed.
Phoſphoric acid, not unfrequently evolved during animal decompoſition.	*Magneſia*, ſometimes.
	Clay, almoſt always."

In the ſecond number of the American "*Medical Repoſitory*," we meet with a letter written by the ſame author, and addreſſed to N. WEBSTER, Jun. from which we communicate the following remarkable paſſages—"It muſt be a welcome intelligence, that the collected maſs of nuiſance which we now are, with ſuch happy ſucceſs, engaged in removing from the city of New York, is convertible, by the powers of vegetation, from poiſon to wholeſome articles of food. There muſt be high ſatisfaction in contemplating how the purity and healthineſs of the towns may contribute to the thriftineſs and wealth of the ſurrounding country. And to all of us it is matter of the utmoſt moment, to receive additional proofs of the power of the alkaline qualities of the *lime*, *pot-aſh*, and *ſoda*, *thrown out and ſcattered about the ſtreets, to neutralize the acid vapours which excite fevers and plagues among us**, and convert them into the *richeſt of manures*; and thus, by one operation,

* Dr. HERMBSTAEDT of Berlin has lately given additional confirmation to the extenſive utility of this ſimple proceſs of purifying the atmoſphere. He directs his aſthmatic and conſumptive patients, to expoſe pot aſh or pearl-aſh in a *dry* and *powdered* ſtate, upon glaſs or

operation, clearing the atmoſphere of its noxious fumes, and preparing nouriſhment for the vegetable world.

"I hope one day to be able to add to theſe teſtimonials, the reſult of my own experience on theſe carbonates and ſeptites of lime, pot-aſh, and ſoda, in raiſing crops of barley and wheat; and in the mean time entertain the hope, that further particulars concerning the operation of *ſtreet-manure,* in raiſing Indian corn, will be given us by the gentlemen who have introduced the experiments.* I think we are getting on the right track of inquiry about theſe matters, and ſhall ſoon be able, for it is moſt certainly in our power, to make peſtilence ſubmit to municipal and agricultural regulations."

On the artificial Impregnation of Animals. Extracted from a Letter written by the celebrated Naturaliſt, SPALLANZANI *to* L. M. A. CALDANI, *Profeſſor at Padua.*

"ON this occaſion I ſhall communicate to you the reſult, or rather the confirmation, of my former obſervations relative to the artificial impregnation or fecundation of animals. The gentlemen who made this extraordinary experiment with a bitch, are Signors PETER ROSSI and NICCOLA BRANCHI, Profeſſors at Piſa; the former communicated to me the following account:—

"On the 12th of January, 1792, I locked up a bitch in a room to which nobody but Dr. Branchi and myſelf had acceſs; we poſſeſſed the key, and therefore could not be deceived by any third perſon. The animal was of the larger kind of fleecy ſpaniels (*canis aquaticus pilo criſpo inſtar ovis*; LINN. *Syſt. Nat.*); was about three years of age, and had twice before produced puppies. We could not diſcover the ſmalleſt ſymptoms of gravidity.

"Between

or china plates, one inch deep, to the air of bed chambers and ſitting-rooms: in the courſe of four weeks the pot-aſh will be completely ſaturated with aerial acids, or carbonic acid gas, the moſt irreſpirable part of the atmoſphere.

* In one of theſe experiments we are informed, that the crop raiſed by Mr. John Stevens of Hoboeken, amounted to 118 buſhels and two quarts of Indi n corn (in the ears) per acre; in another, by Daniel Ludlow, of Weſtcheſter, the produce was, upon an average, 98 buſhels and 14 quarts per acre;—but much greater was the fecundity of the ſoil in the neighbourhood of Elizabeth-Town, where 155 buſhels of Indian corn in the ears have been produced by *one* acre of land; and this, it is added, falls vaſtly ſhort of what *may* be obtained from an equal quantity of ground.

"Between the 18th and 25th of January we had unequivocal proofs that ſhe was in a ſtate prone to copulation; the vagina and the external parts of generation being ſwollen, and at the ſame time tainted with blood. This circumſtance induced us to undertake the artificial impregnation in the manner deſcribed as under.

"We collected about fifteen grains of ſemen diſcharged by a very ſanguine young dog, into a glaſs-veſſel previouſly warmed; and having abſorbed it by a fine ſyringe, heated to the 30° of REAUMUR's thermometer, we immediately introduced it, by means of this inſtrument, into the organ of generation of the above-mentioned bitch. Every precaution was taken to loſe nothing of the ſemen, unleſs what had perhaps adhered to the inner ſide of the ſyringe.

"To conform to nature as nearly as poſſible, we repeated the ſame operation on the day following; with extraordinary care we introduced eighteen grains of ſemen taken from the ſame dog; and now the animal ſeemed to evince by its motions, that ſhe felt agreeable ſenſations on the occaſion.

"On the 28th of January we repeated this artificial proceſs a third time with twelve grains, and on the following day, for the firſt and laſt time, with twenty-one grains of the ſemen. After this laſt impregnation, the bitch no longer ſhewed the *oeſtum veneris*. On the 28th of February we found the abdomen ſoft, thicker than uſual, and the teats ſwelled: ſo that we had the ſtrongeſt reaſon to believe the experiment had ſucceeded. From this time the bitch was ſet at liberty.

"On the 27th of March, being the ſixtieth day after ſhe had loſt the *oeſtrum*, and the uſual period of geſtation in theſe animals, the bitch on whom the above experiment had been made, produced five ſprightly puppies, one of which was of the female, and three of the male ſex; all of them bearing a perfect reſemblance to the parent animals, as well in the ſtructure of their bodies, as in the colour of the hair, and other particulars.

Practical Remarks on the two most prevailing Species of Cramp in the Stomach, by D. G. C. Conradi, *M. D. Resident Physician at Northeim in Germany.*

THE first species of spasm in the stomach originates in extreme debility, relaxation, and atony in that organ, whatever may have produced it as the primary or predisposing cause. The method of curing this distemper consists in the proper administration of alteratives and tonics, particularly those of the bitter kind; in adhering to a regular diet, and lastly, in the use of chalybeates, after the necessary evacuations have been premised. This species of cramp is not so common as the next, but it merits notice here on this account chiefly, that the following may be the better illustrated by the comparison, according to the old adage: "*Opposita juxta se posita magis elusescunt.*"

The second species of spasmodic affections of the stomach arises from increased irritability and sensibility of the nerves connected with this important organ.—Briefly, every thing here exhibits a different appearance from what is observed in the former species, so that the first may not improperly be called the asthenic or passive cramp, and the second the sthenic or active. A good appetite and prompt digestion, a red and florid complexion, a strong and robust constitution, an irritable, active, and at the same time rigid fibre, are the characteristic symptoms of this second class. The affection is not violent in the beginning, but a pressure, stricture, and griping, rather than acute pain, is felt in the region of the stomach. The patient has an oppressive sensation, as if something, not unlike a nail, were fixed behind the stomach: if the attack increase in violence, he complains of stitches in the breast and towards the back, and endeavours to procure relief by shifting his posture. The principal paroxsyms are observed to take place generally in the afternoon, in consequence of bodily exercise immediately after dinner, the use of acid food and drink—and particularly after giving way to gusts of passion, such as terror, anger, grief, and anxiety.—Nothing is better calculated to prevent the approach of this disorder, than a wholesome and easy digestible meal, which, with the moderate use of good old wine, will greatly contribute even towards effecting a cure, after it has become habitual.

This affection is often contracted or induced by persons subject to passionate emotions, on their neglecting to take an emetic occasionally; it is not, in general, attended with acidity, but rather, and most frequently, is produced by a bilious acrimony; and it at length almost invariably dege-

nerates into a nervous habit. This ſpecies of the diſeaſe is found to prevail moſt among the lower claſſes of people, whilſt that ariſing from atony, or relaxation, is more common among the opulent and epicures.

In its firſt attacks, and before it become habitual, the cramp may be conſiderably relieved by emetics, which frequently evacuate bile, together with an acid and corroſive matter. The following remedies, moreover, generally produce a decided effect in checking its actual progreſs: 1. Chalybeate waters, and eſpecially that of Pyrmont*, which has been obſerved in a number of caſes to afford inſtantaneous relief; 2. the *valeriana ſylveſtris*, the leaves of which, when reduced to powder, ſhould be taken three times a day, in doſes from two to four ſcruples, in cold water; the powder however muſt not be kept longer than a few days; this remedy is preferable even to the chalybeates; 3. the frequent drinking of cold water, and partial cold bathing of the region about the ſtomach, by which that preternatural ſenſibility in the digeſtive organs, ſo apt to generate the ſpaſm, is effectually extinguiſhed; and 4. in the ſlighter caſes of the diſeaſe, pills compounded of aſſafœtida and the extract of the valerian. will be found generally ſufficient to remove the complaint.

If the diſorder has become inveterate, and perhaps incurable, palliatives will be the only remedies we can reſort to; and of theſe, opium and caſtor are the moſt efficacious; they are, indeed, not unfrequently ſuppoſed to be of eminent ſervice, even in ſcirrhoſities of the abdomen.

Dr. Conradi concludes with an injunction, after the adminiſtration of emetics, in the firſt ſtages of this complaint, to avoid all bodily exerciſe, as this has a tendency to produce a return of the cramp.—Magneſia will be likewiſe of ſervice here, but neutral ſalts are not adviſeable; hence the plan of evacuating humours is generally productive of miſchief.—The remedies which on trial are found beneficial, ſhould not be too ſuddenly, but gradually relinquiſhed.—In complicated caſes of debility, our attention ſhould be directed to the tonic and ſtrengthening plan. The calx of Biſmuth, the Doctor obſerves, has never proved ſucceſsful, even in the largeſt doſes; although this powerful ſubſtance has been lately extolled by ſeveral practitioners as an almoſt infallible ſpecific.—With reſpect to diet, he adviſes to avoid wine and ſtrong beer between meals; long faſting, honey, gingerbread, ſweetmeats, and all kinds of paſtry are alſo obviouſly pernicious.

* An artificial Pyrmont-water may be prepared by boiling three ounces of iron-filings, and ſix ounces of cream of tartar, in a caſt-iron pot, with eight pints of water, for about four hours, ſo as to reduce it to one half of its quantity; after which it ſhould be filtered through linen or cotton, and preſerved for uſe in bottles cloſely ſtopped W.

nicious. Instead of beer at table, persons subject to spasms from debilitating causes, should drink distilled water; and where this cannot be conveniently procured, they may substitute river-water previously boiled, and allowed to stand till it be perfectly cold.—Lastly, to the long list of substances detrimental to the health of patients afflicted with the cramp, we may add the following articles of diet, ham, bacon, *fat* of pork and mutton, but above all, the habitual and immoderate use of *hot and strong tea*; which is one of the most powerful causes predisposing to that affection.

On the probable Sensations of the Head, after being severed from the Body.

AMONG other singular questions lately agitated in France and Germany, the following is not the least curious: "*Whether the separated head of a person suffering on the scaffold be still, for a certain time, conscious of its sufferings?*" This question was proposed at the time when the guillotine was first adopted as the instrument of public execution in France; and the writings which appeared on this apparently whimsical subject, were numerous. Prof. SOEMMERING maintained in a particular treatise, first printed in the *Moniteur*, that the consciousness of the sufferer still continued for some time; and the Professor is so far persuaded of the truth of this assertion, that in his opinion, the severed head would still emit sounds, if it were not separated from the organs of speech, as well as those of respiration.

Prof. WEDEKIND controverted this opinion, and defended the French method of beheading as the quickest and least painful species of death, by which all consciousness is at once intercepted and annihilated: he says, that the blood-vessels of the separated head are, *ipso facto*, instantly and completely emptied of the blood, and that the organ of the mind is thus rendered totally inactive; consequently, the head cannot be conscious, either of its former or present state.

Mr. CLOSSIUS, of Tubingen, though not fully convinced that the head, in a dissevered state, retains consciousness, yet considers this fact as highly probable, and on the whole, agrees in opinion with Soemmering. He dwells at considerable length, in his treatise "*On Decapitation*," upon the objections started by Wedekind, and endeavours to prove that the blood-vessels of the head are by no means so quickly and completely emptied, as the Professor is disposed to think; and that even without an actual circulation of the blood, there may still remain some activity and energy in the brain. He produces in support of his hypothesis, a variety of arguments,

 derived

derived partly from analogy and a comparifon of the fymptoms of a perfon beheaded with thofe obferved in fimilar fituations; and partly from appearances which have been noticed in individuals executed by the fword or guillotine. On account of this probability, ought not the dictates of humanity to be liftened to, and inftead of beheading, fhould not another mode of execution be devifed, by which the deadly blow, and the complete annihilation of the natural ftructure of the brain, might take place at the fame inftant? Such, for inftance, would be a fudden and violent convulfion of the brain, a mortal thruft on the ftomach, and the like.

Another German writer on this fubject, C. A. Eschenmayer, combats the opinion of Soemmering, but deals fo much in confufed philofophic fpeculations and vague hypothefes, that we fhall forbear taking notice of what he advances; and proceed to give fome account of a French treatife, entitled, "*Opinion du Citoyen* Sue, *fur le Supplice de la Guillotine*;" à Paris, 16 pp. 8vo.—Citizen Sue, not contented with afferting, that the head ftill continues to live, and to feel the moft excruciating pain, as long as the blood remains warm in the fmalleft veffels, maintains that the lower part of the body alfo muft fuffer, after the head has been ftruck off. His arguments are not a little curious. He compares the act of beheading with that of amputation of a limb; as it has been obferved that perfons have felt, or at leaft imagined that they felt, pain in a limb, after being feparated from the body by a chirurgical operation, as alfo after a diflocation of the vertebræ; that the upper parts of the body remain fenfible and alive, while the lower extremities are lifelefs and infenfible to pain. The incongruity of this mode of reafoning from analogy is fo palpable that it requires no refutation.

The author quotes various inftances of preternatural births, or monfters born without a brain, and fpinal marrow, on which he grounds his conjecture, that the lower extremities of the body are ftill fenfible to pain, after a feparation of the head has taken place. But, befides the obvious inconfiftency in this comparifon, it requires to be previoufly proved, that fuch monfters have ever had confcioufnefs, and fuffered pain, on account of the unnatural ftructure of their bodies. The remarkable facts witneffed by the author, during a number of executions at Paris, and related in this treatife; for inftance, the fingular phenomenon of fmiling, or rather of blufhing, in the trunklefs head of Madame Cordet, the affaffin of Marat, are no doubt curious, but not conclufive.

The fubject of difpute is indeed fuch as admits of no pofitive decifion; for the feelings of a perfon, after the mortal blow has been given by the fword or guillotine, cannot be afcertained, and we may pronounce it impoffible

sible for human reason to form an adequate conception of their greater or less duration. If there exist a something within the body, which after its dissolution hastens towards another destination, in which we shall not be insensible to agreeable or disagreeable sensations, this something will no doubt also possess the consciousness of its situation, whether the body has been destroyed by a putrid fever, by poison, by a concussion of the brain, or by any other mode of depriving or taking away life. It does indeed not, here, depend upon the state of the circulation of the blood, or other relations, as connected with the body; for it must be admitted, that this something, if it continue after and without the body, has no connection with corporeal causes, organs of the mind, or the like.

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Remarks on the practical Utility of Galvanism, or Metallic Electricity, with a View to ascertain its Effects on muscular and nervous Irritability.

THE experiments of GALVANI, on the irritability of the muscular and nervous fibre, by the well-known application of metallic stimuli, have long excited the curiosity of medical practitioners, and induced many of them to address the query—*Cui bono?* At length M. VON HUMBOLDT has published his "*Experiments on the stimulated muscular and nervous Fibre, with Conjectures on the chemical Process of Life in the Animal and Vegetable Kingdoms,*" (in German) Vol. I. 8vo. pp. 495, with eight plates. The very ingenious author of this work is considered in Germany as the *founder of a rational system of* ANIMAL CHEMISTRY. The nature and tendency of his unremitted inquiries will be more clearly understood from the following characteristic passage extracted from the preface:—" For several years," says he, " I have been assiduously employed in comparing some phænomena of animal matter with the laws of inanimate nature. During these researches, I have succeeded in experiments, which promise to conduct us somewhat farther in discovering the chemical process of life. I have found that the separated organ of an animal, being provided with irritable and sensible fibres, may in a few seconds be raised from a state of the most complete insensibility, (inexcitability) to the highest degree of susceptibility of a stimulus, and *vice versa*. This alternate change of increased and diminished vital power may be produced in a nerve, four or five times, by the same act of volition, with which the hand of the artist extends or relaxes the strings of an instrument. I have stimulated the organs of animals with oxygenated muriatic acid, alkalies, nitrous acid, the calx of arsenic, opium, and

alcohol, for some hours successively, and yet they emerged from these struggles with the contending elements, almost without any material change of their nature. I have observed, that animal bodies possess the power of operating from a distance, and have endeavoured to exhibit to the senses this circle of action, which decreases together with the power of life. I think I can demonstrate, that the irritability of matter does not depend upon the quantity of *oxygen* alone, as is conjectured by modern physiologists, and as my own experiments upon plants appear to insinuate; but that *azote* and *hydrogen* have a more important share in this power; and that every thing herein depends upon the *common operation and the antagonism of a plurality of substances.*"

We shall not attempt here to abridge this work, or to give an abstract of the numerous experiments instituted by the author, on animal and vegetable substances, under the most diversified circumstances and relations, as the task would be too complicated and laborious. The reader will be better gratified by learning the general result of Mr. Humboldt's inquiries into the *practical utility* of *Galvanism*; for the metallic stimulus invented by Galvani has been lately exhibited by another German writer, Mr. CREVE, as the most certain criterion for distinguishing *asphyxia* from actual death. Humboldt is of opinion that this stimulus is not an infallible mode of ascertaining death in cases of asphyxia; because, 1. the electric fluid still evinces symptoms of the susceptibility of stimulus in a nerve, which can no longer be sensibly affected by that of Galvani; 2. because the experiment can be made only on *some* parts of the body; and the want of excitability in these, does not infer the same defect in the *whole* nervous system; 3. because we have instances in which the metallic stimulus has proved ineffectual in those organs which shortly before, and even after its application, could be voluntarily moved; and, 4. as it is a matter evidently doubtful, that parts which for a time appear to be deprived of all irritability, can in the sequel again recover it.

On the most proper and beneficial Application of Electricity in Diseases: abstracted from the Essay on that Subject, by Professor IMHOFF, *of Munich.*

IT cannot be denied, that *medical electricity* has been only of late years reduced to a systematic form, and that we are in this respect particularly indebted to the labours of TISSOT*, CAVALLO, and BERTHOLON. The last

* The celebrated Tissot was unquestionably the first who treated scientifically on the medical application of electricity, exhibiting also just principles on which to found this process, in his classical letter, '*De variolis, apoplexia et hydrope.*'

last of these meritorious characters framed a peculiar theory, according to which he derived all diseases either from the want or abundance of the electric fluid in the human body. He invented several useful instruments, and his method of applying them introduced a happy medium between the violent shocks recommended by some, and the timid practice of electrifying followed by others. By the exertions of such men, we at length arrived at stable principles, established on the broad basis of experience, by which we were taught, that electricity increases or promotes the circulation of the blood, and produces this effect particularly by what is called the *negative bath*. Thus we learned, by satisfactory proofs, that the electric fluid operates as a stimulating remedy on the animal body.

Meanwhile, the well-known experiments of GALVANI with the metallic stimulus, excited an uncommon degree of attention in the medical world; but the consequent theories were too hastily formed, and pursued with hypothetical fallacy. This species of stimulus is certainly insufficient to afford a sure criterion of actual death, and to ascertain clearly the state of asphyxia, for this additional and obvious reason, that the disposition or tendency of the muscular fibre, to be affected to such a degree as to be thrown into convulsions by the application of metals, is considerably diminished in certain diseases, for instance, the gout and rheumatism; it must, however, be admitted that the nerves are very sensible electrometers, and that the animating principle which pervades them, is forcibly stimulated in the transition of the electric fluid from one metal to another.

Electricity is one of the most powerful stimulating remedies which can be applied to the animal œconomy. Its effects may be considered both as general and local. Too violent shocks of it at once extinguish the vital principle, which, however, may be again kindled or excited by less powerful shocks. Hence the following positions may be admitted, in general, as correct and established; that electricity promotes the free circulation of the fluids, and particularly the blood; that it accelerates perspiration, and increases animal heat, and likewise promotes all the secretions and excretions of the body.*

In the application of this powerful remedy, the following hints may be of service, as they are the result of actual experience, and not of speculation: 1. Electricity is attended with pernicious effects in *active* or *sthenic* diseases: 2. it is hurtful when, together with relaxation and debility, an uncom-

* It may properly be remarked here, that the effect of promoting the secretions and excretions by means of electricity, will then only take place when these have been diminished by atonic causes.

commonly high degree of excitability in the organs of ſenſation is felt, as well as in thoſe of voluntary motion; and 3. if a preternatural impulſe of the fluids, ariſing from local irritation, prevail in any particular part of the body. In this caſe, electricity has a direct tendency to generate congeſtions, or the local accumulation of humours. In atonic collections of matter it is frequently found of ſervice, when the great vital activity of the ſolids alone is capable of reſolving the ſtagnations; but it is certainly detrimental, if the mechanical power of reſiſtance in the ſolid parts muſt, at the ſame time, be raiſed; and if the accumulated matter muſt be previouſly diminiſhed, before it can be diſcuſſed. Hence the application of electricity has ſometimes been highly beneficial in promoting a regular return of the menſes; but it has alſo, in certain caſes, been attended with dangerous effects.—It is further of conſiderable advantage in paſſive or aſthenic diſeaſes, particularly in caſes accompanied with a diminiſhed ſuſceptibility of ſtimuli in the organs of ſenſation and motion; provided that ſuch diſorders, at the ſame time, be manifeſt from the periodical returns of uncommon muſcular action, or by occaſional exceſs of the ſenſitive faculty in any particular part. Laſtly, the mode of imparting the electric fluid deſerves more attention than has hitherto been beſtowed upon it; and we ought never to communicate violent ſhocks, where leſs powerful ones might anſwer the purpoſe. Upon the whole, it appears to be an eſtabliſhed maxim that, under the circumſtances and conditions above ſpecified, both the electric bath, and the gentle application of the electric fluid to any particular part of the body, are always ſafe; and that the extraction of ſparks under ſimilar circumſtances is generally attended with advantage. The more violent methods of electrifying, on the contrary, have been productive of miſchief rather than good; ſo that they ought to be applied to thoſe individuals only, whoſe excitability is languid, or whoſe capacity for receiving impreſſions by external ſtimuli, is conſiderably diminiſhed.

Obſervations on the Medical Uſe and Effects of the Digitalis Purpurea; extracted from an Eſſay of Dr. Mease, *Reſident Phyſician of the Port of Philadelphia.*

THE Purple Fox-glove is a medicine which, for ſome time, ſtood high in the liſt of the materia medica, but for various reaſons appears to have, in ſome meaſure, loſt the character once formed of it.—The cauſes influencing the ſucceſs of the *digitalis*, may be referred to the following heads:

heads: 1. The *ſeaſon of the year in which the plant is collected* will have a very conſiderable influence on the effects produced on the ſyſtem. 2. The *part of the plant employed* ought likewiſe to be attended to, when forming a judgment of its virtues. 3. A frequent cauſe of the failure of *digitalis* may be attributed to the careleſs mode of preparing it for uſe. 4. The *adulteration of the plant* with other vegetables. 5. The various mode of exhibiting this medicine; and 6. The *particular condition of the patient* at the *time* of its *exhibition*.

Dr. Mease very judiciouſly comments upon each of theſe particulars, and more at large upon the laſt. He examines with ſome acuteneſs the different opinions of phyſicians, relative to this ſubject, and illuſtrates them with his own obſervation and experience on the effects of this powerful plant.—As a ſpecimen of his method of reaſoning, we ſhall quote the following remarkable paſſage;

"To account for the ſucceſs of this remedy in dropſies, and diſeaſes of too much action in the arterial ſyſtem, is readily done. But, to reconcile the oppoſite teſtimony of Dr. Withering and others, with reſpect to their different ſucceſs in dropſies of too little action, is very difficult: nay, to reconcile the contrary advice of Dr. Withering himſelf, who recommends the digitalis in mania and hemoptœ, 'with a *bounding pulſe*,' and in dropſies with a *weak* one, is impoſſible. And here I may repeat a remark I formerly made, viz. 'That a medicine whoſe primary operation is the reduction of the force of the arterial ſyſtem, when this is ſo intimately connected with the general ſtrength of the body, ſhould only ſucceed in thoſe caſes, where the latter is conſiderably exhauſted, appears not only to be paradoxical, but ill agrees with the uniformity obſerved in the operations of nature, in other parts of the animal œconomy.'—It is incumbent on Dr. Withering to account for this apparent oppoſition in his own ſentiments, and to ſatisfy the doubts of phyſicians, ariſing from the action of the remedy being directly contrary to the principles upon which alone certain dropſies can be cured. I may alſo remark, that it is much to be wiſhed, phyſicians were more accurate in noting the ſtate of their patients ſyſtem, at the time of preſcribing this and other remedies; and alſo the ſtate of the pulſe at the ſame time, with its frequency; which, though ſo conſtantly ſtated, is of far leſs conſequence in determining the ſituation of the ſyſtem, as to the important point of the exiſtence or abſence of the inflammatory diſpoſition, than the former. We ſhould thus arrive with more certainty at the *true* virtues of a medicine, and be able to reconcile the contradictory accounts of phyſicians, reſpecting its utility in the ſame diſeaſe."

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These *golden* remarks cannot be too *often* and too *ſeriouſly* repeated, particularly to the junior claſs of medical practitioners.—Our author quotes a ſtriking paſſage from a letter of Dr. Withering to Dr. Woodville, publiſhed in the "*Medical Botany*" of the latter, in which the inattention of phyſicians, in the exhibition of *digitalis*, is ſeverely cenſured, and he concludes with the following practical hints:

"It may not be improper to add ſome cautions and obſervations upon the uſe of digitalis, not mentioned in the above paper, for the information of thoſe who may not have ſeen Dr. Withering's work, and may wiſh to exhibit the medicine.

"The Doctor deſires the medicine to be given in the doſes in an infuſion of the plant, which he prefers to every other form, and directs one drachm of the dried leaves to be infuſed for four hours in half a pint of boiling water, adding to the ſtrained liquor half an ounce of any ſpirituous water, and an ounce of this infuſion to be given twice a day to an adult. If the patient be ſtronger than uſual, or the ſymptoms very urgent, this doſe may be given once in eight hours; and, on the contrary, in many inſtances, half an ounce at a time will be quite ſufficient. (This method of exhibiting the medicine, ought to be continued, until it either acts on the kidneys or ſtomach, pulſe or bowels: to be ſtopped upon the firſt appearance of any of theſe effects; the patient to drink freely during its operation). But, without attending to this rule, I have known the digitalis preſcribed in the various forms of decoction, pills made with ſoap, and in powder mixed with prepared chalk or magneſia; and though the two laſt ſubſtances may not act in any oppoſite way, yet they may divide the particles, and, by clogging them, prevent application to the ſtomach, and thus diminiſh its activity. A tedious decoction will diſſipate the virtue of many plants leſs volatile than digitalis; but, a ſlight one will no doubt injure it, and ought therefore never to be employed. Pills are often made up with ſuch ſubſtances, as render them ſoluble with difficulty. If we even ſuppoſe ſoap free from this objection, we nevertheleſs do not know, what ſecret effects may be produced by it, on particular ſtomachs, to interrupt the action of the medicine; and certainly it will not be ſo readily applied to that organ, as in a watery form.

"In caſe of *aſcites* and *anaſarca*, when the patient is weak, and the evacuation of the water rapid, the uſe of a proper bandage is indiſpenſably neceſſary. If the water ſhould not be wholly evacuated, it is beſt to allow an interval of ſeveral days, before the medicine be repeated, in order that food and tonics may be exhibited.

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"The flow of urine will often precede, ſometimes accompany, and frequently follow the ſickneſs at ſtomach, at the diſtance of ſome days, and not unfrequently be checked by the medicine, eſpecially if given in too large doſes. The ſickneſs will ſometimes ceaſe, and recur again as violent as before, and will continue to recur for three or four days, at more diſtant intervals. Theſe ſufferings ſeldom occur, and are no objection to the uſe of digitalis, neither is a ſtone in the bladder."

On the Uſe of Vomits, in Caſes of apparent Death. By a Correſpondent.

A VERY ſingular controverſy, *reſpecting the propriety of adminiſtering emetics in caſes of ſuſpended animation*, having been lately raiſed and carried on between two medical gentlemen, with ſome degree of acrimony, my attention has been naturally excited to this important ſubject; and on the whole it appears to me, that the nature of it requires ſome further elucidation and diſcuſſion.—And as one of our moſt popular periodical publications has in a manner declined to become the vehicle of *this ſpecies of controverſy**, I ſhall addreſs myſelf to your Journal, as the moſt competent tribunal for inveſtigating and deciding this controverted matter.

It has been frequently obſerved by able and experienced phyſiologiſts, that the great maſs of errors and imperfections, imputable to the theory and practice of medicine, have taken their riſe from an uncommon fondneſs for *generalizing* facts without ſufficient experience. This propenſity to frame theories, and hatch hypotheſes, is particularly obſervable among the junior part of authors and practitioners. However laudable and ſometimes beneficial, ſuch theories may prove ultimately, they cannot fail to be attended likewiſe occaſionally with injurious conſequences; eſpecially if they be *implicitly* adopted, and applied to practical purpoſes, by a body reſpectable for their numbers.

Of this ſuſpicious, if not dangerous tendency, the ſuggeſtions of Mr. CHARLES BROWN, appear to be, reſpecting the application of emetics, for the recovery of perſons apparently dead. In the "*Monthly Magazine*" for October laſt, p. 241, Mr. Brown informs us, that the Royal Humane Society, at their laſt annual Court of Directors, preſented him with a medal for a ſucceſsful treatment and application in an extraordinary caſe; that in the directions publiſhed by the ſociety, for the recovery of drowned perſons, the practice of giving vomits is rigidly interdicted; that,

* Vide the *Monthly Magazine* for December 1798, p. 426.

that, in oppoſition to theſe, and to the decided opinion of Dr. A. FOTHERGILL * of Bath, he (Mr. Brown) adminiſtered an emetic to a girl, thirteen years, of age, who had attempted to deſtroy herſelf by drowning in a tub of water; that in the ſpace of about ten minutes the body became convulſed, a large quantity of water ejected from the ſtomach, and other ſymptoms of life gradually appeared; and in ſhort, that the patient, by the next morning, was completely recovered. After having thus narrated the apparent particulars of the caſe, Mr Brown concludes with the following hypothetical remarks:

"If we conſider the general ſhock which emetics give to the ſyſtem, and the great probability there is of immediately ſtimulating the heart by the diſengagement of oxygen-gas in the ſtomach, I think we are fully warranted in having recourſe to ſuch powerful aids. I will grant, in caſes of congeſtions in the blood-veſſels of the brain, by the imprudent adminiſtration of vomits, there are ſome inſtances recorded where their uſe in caſes of ſuſpended animation has been attended with fatal conſequences."

It was hardly to be expected, that ſo bold and novel a proceſs as that *of* IMMEDIATELY *ſtimulating the heart, by the diſengagement of oxygen gas in the ſtomach,* ſhould encounter no oppoſition, even though it were taken for granted, that the emetic uſed, (for inſtance, that employed by Mr. Brown in the caſe before ſtated, which conſiſted of a ſolution of oxyde of zinc in water), contained in it, virtually and actually, oxygenous matter. We find accordingly, a judicious letter, written by N. of Briſtol, and inſerted in p. 425 of the "*Monthly Magazine*" for December laſt, in which Mr. Brown's opinion is freely animadverted upon; and after explaining in a curſory manner the *primary* effects which emetics produce on the human frame, the letter-writer condemns the general uſe of emetics in caſes of aſphyxia, and ſubjoins the following queries, which Mr Brown brands with the name of *ſuperficial.** "How is oxygen-gas to be diſcharged in the ſtomach, and by what chemical proceſs is the diſengagement of it to be effected?" And as Mr. Brown is profeſſedly engaged in a ſeries of experiments connected with this ſubject, the Briſtol correſpondent expreſſed his hopes, that Mr. Brown would be enabled to throw ſome additional light on it.——Indeed, Mr. Brown himſelf, in his firſt letter dated October 18th, 1798, ſpeaks with no little ſatisfaction of his experimental purſuits, "*which, when completed, will throw more light on the ſubject.*" Yet, after the lapſe of three months, inſtead of detailing any of the experiments in which he has ſince been engaged, in confirmation of his particular hypotheſis, or overturning the data laid down by his opponent at Briſtol, reſpecting the operation of emetics in caſes of aſphyxia,

* Vide Mr. Brown's Letter in the "*Monthly Magazine*" for January, 1799, p. 24.

aſphyxia, Mr. Brown appears anxious to avoid the inveſtigation of this *eſſential* part of the queſtion, and contents himſelf with laying before the medical world the following general and extraordinary anſwer:

"If, (ſays Mr. Brown in his laſt letter in the "*Monthly Magazine*," dated January 12th, 1799,) your correſpondent N. at Briſtol, with all his chemical knowledge of the properties of the different gaſes, but particularly that of oxygen, cannot *comprehend* the *exiſtence* of a *fact* admitted by all enlightened philoſophers of the preſent day, viz. that ſubſtances, ſuch as the oxydes of mercury, zinc, &c. do contain oxygenous matter in ſolution, and that by a chemical proceſs which takes place in the ſtomach, and which is admirably calculated to excite our admiration and anſwer our deſigns, do readily impart this vivifying principle, to ſtimulate the vital organs, it is not for me to ſpend that time in anſwering ſuch *ſuperficial queries*, which require only a *ſlight knowledge of philoſophical chemiſtry* to ſolve, and which might be more uſefully employed in the exerciſe of my profeſſional duties."

How far in this anſwer Mr. Brown, who ſeems pretty converſant in the catalogue of mottos, has really fulfilled the tenour of the quotation with which his laſt mentioned letter is adorned,

"*Non ex fulgore fumum, ſed ex fumo dare lucem.*"

might be thought invidious to determine here.—We ſhall take the liberty, however, to expreſs our ſurpriſe at the mode which Mr. Brown adopts to ſilence at once his Briſtol antagoniſt. Would it not have appeared equally candid and worthy of a *philoſophical chemiſt*, to acknowledge ingenuouſly the imperfect ſtate of our phyſiological knowledge reſpecting the operation of gaſes, when introduced into the human body; and particularly in what relates to the *diſengagement of oxygen gas in the ſtomach*, which, according to Mr. Brown, *immediately ſtimulates the heart?* We apprehend, it is not by a *ſlight knowledge* of philoſophical chemiſtry, that we ſhall be enabled, even at ſome future age, to develope the myſterious nature of theſe powerful agents, viz. the permanently elaſtic fluids. Perhaps, even Mr. Brown might have added to the merits he already poſſeſſes as an author and ſucceſsful practitioner, if he had furniſhed us with the opinions of ſome of the principal writers, *reſpecting the ſafe and unſafe adminiſtration of emetics in caſes of apparent death.*

After having conſulted ſeveral domeſtic and foreign writers on the ſubject, we ſhall conciſely communicate the reſult of our inquiries, together with ſome authorities on which the opinion hereafter given is founded. We ought however to premiſe, that no precepts can be laid down which will admit of general application in *all* caſes of aſphyxia; and, in this reſpect,

ſpect, we ſhall willingly do juſtice to the limited and guarded manner in which Mr. Brown expreſſed himſelf in his firſt letter on this ſubject, by ſaying, that he will relate a caſe of reſuſcitation by means of emetics, and "make ſuch obſervations as the nature of *that* caſe ſuggeſts." In this preciſion we recognize the medical philoſopher; but, as to the promiſed obſervations themſelves on the caſe in queſtion, which have probably been forgotten from the preſſure of profeſſional avocations, we have been much diſappointed, and flatter ourſelves that Mr. Brown will not fail to ſupply us with them on ſome future, perhaps more favourable, occaſion.—We ſhall now proceed to cite the opinion of the German SYDENHAM, Dr. UNZER of Hamburgh, a venerable old practitioner, who, in his "*Manual of Domeſtic Medicine,*" p. 922, treating of the uſe of emetics, in caſes of perſons having ſwallowed narcotic poiſons, or being ſuffocated from the vapours of charcoal, or other ſpecies of mephitic air, expreſſes himſelf to the following purport: "I do not conſider the emetics, in theſe caſes, as nearly ſo dangerous and hurtful as many phyſicians are inclined to ſuppoſe. All narcotic poiſons taken internally require emetics, which have an obvious tendency to alleviate the concomitant ſymptoms.—According to theory, the brain, if affected or ſtupified by any of the narcotic poiſons, will not feel any augmented oppreſſion from the additional afflux of the blood to the head; an effect generally produced by emetics. But are they to be conſidered as unavailing in the treatment of perſons ſuffering from narcotic poiſons? Is the evacuation of the ſwallowed venomous matter the only effect produced by them? Have they not at the ſame time a remarkable effect on the nerves? The celebrated TISSOT, although deprecating the uſe of emetics, recommends to perſons apparently drowned, the immediate taking of the oxymel of ſquills, or an infuſion of camomile flowers, carduus benedictus, and the like; all of which eaſily excite vomiting, and yet, ſays he, *they do not act merely as emetics.* They muſt, therefore, be uſeful in another way; for, it is well known that all narcotic vapours, frequently of their own nature, excite vomiting: this effect, however, according to Tiſſot, ariſes from their preſſure on the brain. Admitted: but the voluntary hæmorrhages of plethoric individuals likewiſe proceed from a force which the arteries ſuſtain; and nevertheleſs, as ſuch perſons are relieved by bleedings, we follow the indications of nature, when we recommend veneſection as the ſafeſt method of cure. The caſe is perfectly ſimilar; for this revolution of the ſtomach alleviates and improves, for inſtance, the whole condition of a perſon completely intoxicated. It is certain, that perſons in this ſtate never receive injury from ſpontaneous vomiting; but that they preſently become ſober, and the preſſure on the brain is relieved accordingly as they vomit more or leſs frequently, during

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the paroxyſm of intoxication. Why ſhould then mere theory cenſure thoſe who order emetics to perſons ſuffocated from narcotic and other deleterious vapours, with evident and unvaried ſucceſs? It is needleſs to adduce more arguments againſt ſuch as are influenced by the ſimple theory of narcotic action on the brain, and by ſimilar conjectures, which are ſufficiently confuted by experience." In ſeveral other paſſages of his valuable work, Dr. Unzer adviſes the uſe of emetics in the following dangerous caſes: in the *catarrhus ſuffocativus*; *in apoplexy* ariſing from a bilious ſurcharge of the ſtomach; in palſy of the tongue, *raphania*, in the hooping cough, hæmoptyſis, uterine hæmorrhages, the bilious dyſentery, and epilepſy.

To prevent, however, any miſapplication of this excellent and powerful remedy, it will be requiſite alſo to notice the various contra-indications, in which we muſt either totally abſtain from, or proceed with the greateſt poſſible caution in the uſe of emetics, viz. 1. In plethoric individuals in general, and particularly ſuch as manifeſt a diſpoſition to congeſtions in the blood-veſſels of the head, breaſt, ſtomach, and liver; 2. in actual inflammation of the inteſtines; 3. in extreme debility of the body; 4. in ruptures, prolapſus of the uterus, &c. 5. in violent pain from encyſted biliary and other concretions; 6. in obſtruction of the bowels or *infarctus*; 7. in perſons of too rigid fibres, for inſtance, the very aged, in whom the fibres might eaſily break from too violent exertion; 8. in a very weak or injured ſtate of the viſcera, particularly the lungs, liver, and ſtomach; and, 9. in a preternatural ſtructure of the body, or certain parts of it, wherein many individuals cannot take emetics without great danger; ſuch as thoſe who are troubled with a hump-back, a very ſhort neck, or a narrow cheſt.

A comparative View of the principal Theories which have prevailed in Chemiſtry ſince the beginning of the preſent Century, By Dr. Frank, *Sen. of Vienna.*

THERE is no branch of uſeful and intereſting knowledge, which, as to its *practical tendency*, has been ſo long and unaccountably neglected by the bulk of mankind, and which at the ſame time has experienced ſo many whimſical revolutions in doctrine, and miſapplications in experiment, as that of chemiſtry.

Previous to the time of the learned Beccher*, this rational and truly philoſophical

* John Joachim Beccher, born in 1645, at Spires in Germany, was firſt Profeſſor of medicine, and then firſt phyſician to the Elector of Mentz, and afterwards to

philoſophical ſcience was much upon a level with aſtrology; the chemiſts of thoſe ages were, in fact, little better than frantic alchemiſts, ſordid adventurers after what they termed the philoſopher's ſtone, or, in other words, downright enthuſiaſts, who expected to prolong their ill ſpent lives, and to accumulate immenſe wealth, by means of alchemical reſearches and productions.

Beccher ſurpaſſed both his cotemporaries and predeceſſors, in a very eminent degree: his obſervations were directed with great acuteneſs and accuracy to the nature and origin of the phenomena occurring in his chemical laboratory, and he was the firſt who, in this ſcience, attempted to combine theory with practice. It cannot however be aſſerted of him with truth, that he was not affected with the epidemic mania of the times; on the contrary, the chimerical and childiſh purſuit of converting baſe metals into gold, was his principal ſtudy, occupation, and probably the prediſpoſing inducement with him, to exert himſelf in his various phyſical reſearches, to penetrate more deeply into the nature of corporeal ſubſtances. Hence, even the uſeful part of his doctrine is ſo interſperſed and obſcured with alchemical conjectures, that it becomes a matter of difficulty to ſeparate the droſs from the ore; ſo much do his works abound with theſe excreſcences of a fertile imagination!—At the time when this ſemi-philoſopher ſhone as a luminary in chemiſtry, there aroſe a man whoſe luminous, comprehenſive mind, contraſted with the puny ideas of contemporary writers, ſtill claims our reſpectful notice and admiration. It will be readily apprehended, that we allude here to the celebrated STAHL*; a man raiſed up to illuſtrate and eſtabliſh genuine chemiſtry,

to the elector of Bavaria. He came to London, where he found an asylum from the malice of his invidious enemies, and died here in 1685. Besides various chemical and alchemical works, he publiſhed a book intitled, "*Character pro notitiæ linguarum universali*:" i. e. A univerſal language, by the medium of which all nations might understand each other. It is the fanciful idea of a man of genius; although it is not improbable that he was indebted for the first hint on this curious subject, to the cotemporary work of Bishop WILKINS, published in 1668, folio: "*An Essay towards a real Character and a philosophical language.*" Beccher was the first who applied chemistry in all its branches to philosophy, and showed what use might be made of it, in explaining the structure, the combinations, and the mutual relations of bodies. He pretended to have invented a sort of perpetual motion, as he was a very able machinist. The world is indebted to him for several useful discoveries, and he also attempted to make some improvement in the art of printing.

* George Ernest Stahl, was born in Franconia, in 1660, and chosen Professor of medicine at Halle, when that celebrated university was founded in 1694. The excellency of his lectures, while he filled that chair; the importance of his various publications and his extensive practice, soon raised his reputation to a great height. He received an invitation to settle at Berlin, which he accepted, and was made counsellor of state and physician to the king. He died in 1734, in the 75th year of his useful life, and without doubt is one of the brightest luminaries, of which the annals of medicine can boast.

mistry, boldly attacking that horde of physical vermin, the alchemists, and incessantly darting the well directed shafts of satire and criticism, against the absurd prejudices and ignoble labours, which at that time disparaged the science of chemistry. He not only was instrumental in pulling down and demolishing a fabric erected with the most whimsical and grotesque materials, but he also possessed talents and ingenuity adequate to the rearing of a new system, compiled, in some measure, from the vestiges and fragments of former theories; a system incomparably more rational and just than those of his predecessors, and of considerable advantage to the subsequent progressive improvements which have taken place in that science. In a word, he projected a thorough reform in chemistry; retaining, however, what appeared useful, and superadding whatever he conceived to be necessary towards the establishment of his new doctrines. On these principles arose his famous *system of phlogiston*, which, however variously modified, has preserved its original character to the present day.

The following principles constitute the general outline of this system:

There is a principle subsisting in nature, which is the *sole* and *exclusive* cause of heat and fire. This principle, *phlogiston*, pervades all material bodies whatever, and indeed is a *constituent part* of the same, although it prevail in different proportions. Substances which possess a considerable quantity of it, are called *combustible* or *phlogistic* bodies. These *only* are capable of producing heat, light, and fire. *Phlogiston* appears to be a *subtile earth*, intimately combined with the *matter of fire*. By a *violent concussion of its parts*, the motion of fire is produced; and on this occasion the phlogiston is partly decomposed, and partly *volatilized.*—If both these phenomena take place, the *access of air* will be indispensably necessary; as, without it, the phlogiston would be *fixed in the fire*, and *not decomposed*;—of this, the rust of iron affords a proof, wherein the phlogiston exists, in the highest degree of accumulation. There is *no specific gravity* in this element, yet it is capable of rendering fixed bodies volatile. *Colours* are indebted to it for their existence. To metals it imparts lustre, cohesion, and solidity; all of which they lose when deprived of phlogiston, but recover by its access. It is therefore an *essential* constituent in all metallic bodies; yet the precious metals do not appear to contain it.*

Such

* Stahl's Guide to Metallurgy, including an Introduction to the Knowledge of the Subterranean, Mineral, and Metallic Bodies, together with their original Mixture, (in German.) 8vo. Leipzig. 1720. Stahl's Reflections on the Dispute respecting the Nature of Sulphur. 8vo. Halle. 1718.

Such is the outline of the ingenious ſyſtem created by Stahl. Conſidering the imperfect ſtate of chemiſtry in that age, it was a maſter-piece of his profound genius, a phenomenon highly conducive to the progreſs of phyſical knowledge, and a glorious precurſor to the actual improvement which this ſcience has ſince attained. Stahl it was, who gave a ſtable point of gravitation to chemiſtry; till then toſſed about, as it were, by the blind operations of ſuperſtitious fanatics and jugglers. He reduced the complicated train of phenomena to a regular ſeries, eſtabliſhed on ſcientific principles; he ſhed the light of day on the obſcure laboratories of the alchemiſt, and diſperſed the miſts of their hyperphyſical reveries, which were moreover expreſſed in the moſt unintelligible jargon. Henceforth chemiſtry aſſumed a new and more advantageous form, and has ever ſince juſtly claimed the appellation of a ſcience, which until that period could not be granted to it with propriety. Many of the learned, who were not totally immerſed in the ſpeculations of alchemy, applied themſelves with laudable zeal to the further elucidation and improvement of his new doctrine, and Stahl now enjoys the acknowledged honour of being conſidered as the founder of *ſcientific chemiſtry.*

It was to be expected, however, that the defects and imperfections of this ſyſtem would be ſoon diſcovered, in an age of progreſſive cultivation of the ſciences. Many phenomena could not be ſatisfactorily explained, others were entirely overlooked, by the author of the new theory of phlogiſton. Of this nature are the abſorption of reſpirable air during combuſtion and calcination; the increaſe of weight acquired by bodies during that operation; the eſcape of vital air in the reduction of mercury when performed in cloſe veſſels; the formation of carbonic acid or fixed air; the decompoſition and reproduction of water; together with a number of other phenomena which, in Stahl's ſyſtem, were couched in problems, the ſolution of which was deemed impoſſible.

Many zealous and acute chemiſts have endeavoured to ſupply theſe defects, and to render this ſyſtem more deſerving of that name; others have rejected it *in toto*, and directed their ſpeculations purpoſely to frame another theory, which might more ſatisfactorily account for all the unexplained phenomena.

From this happy ſectariſm in chemiſtry, two diſtinguiſhed parties have taken their riſe, that of the advocates for phlogiſton, who appear obſtinately determined not to relinquiſh their favourite hypotheſis; and that of the antiphlogiſtic ſchool, which has daily and rapidly increaſed in numbers, and in which the exiſtence of phlogiſton was, and is, boldly denied and ridiculed. With the well-known philoſophic chemiſt of France,

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the immortal, though unfortunate Lavoisier*, at their head, the latter party has at length prevailed; yet not without a long and ſevere conteſt, which has terminated in an almoſt complete victory over the diſciples of Stahl. The diſputed point was canvaſſed with uncommon ardour by men of ſuperior merit on both ſides of the queſtion, and the conflict was maintained for ſeveral years, with various and very unequal ſucceſs. The ground-work of this ſtructure, the *ci-devant* phlogiſton, has been ſhifted and modified in a thouſand different ways and forms. At one time it was not permitted to penetrate through veſſels; at another time they allowed it a free paſſage to and from them. Some pronounced it *neutral* † with reſpect to its ſpecific gravity; ſome maintained that this gravity was *negative* (*a*); with ſome it was a ſubſtance of an unknown baſis (*b*); with others it was a combination of the elements of air and fire (*c*); or inflammable air itſelf (*d*); again, with others, it was conſidered as pure light (*e*); and laſtly, it was ſaid to conſiſt of the matters of heat and light in a combined ſtate (*f*). In ſhort, it was a Proteus, who aſſumed every poſſible figure, and could adapt himſelf to any form whatever.

In conſequence of theſe ill-according opinions, and to avoid the diſgrace of appearing to favour doctrines ſo irreconcileable, a new ſyſtem of chemiſtry was framed in Germany, which originated chiefly from the ideas of three celebrated Chemiſts, Wiegleb, Gren, and Westrumb, and which was ſtyled the *improved* phlogiſtic ſyſtem. The following are its principal tenets: The matter of *light* and *heat*, in a *ſtate of combination*, exhibit *phlogiſton*. During the inflammation of combuſtible bodies, theſe matters are ſet at liberty or diſengaged, either ſingly or in a combined ſtate; hence ariſe light, heat, and fire. This diſengagement, however, can only take place, when the phlogiſton acquires activity by *communication* with the atmoſpheric air, or with that conſtituent part which renders it fit for the reſpiration of animals. This elaſtic matter, termed *pure* or *dephlogiſticated air*, conſiſts of *water* and *matter of heat*; it is of all ſubſtances

* It is impoſſible to pronounce the name of this illuſtrious Frenchman, without feeling that degree of ſympathy and indignation, which his untimely and ſhocking end muſt excite in the boſom of every friend of ſcience, and perſecuted innocence. Lavoisier was among the victims of fanatical, and, as ſome will maintain it, ariſtocratical vengeance: he ſuffered under the guillotine in 1794, which was then totally at the command of that ſanguinary monſter, Robeſpierre, of infamous memory. We ſincerely deplore the loſs of Lavoiſier; a man more to be regretted than any other that has fallen ſince the beginning of the ſtruggle.

† This was the theory of Stahl, and his ſtrict adherents.

(*a*) Gren. (*b*) Scheele and Crawford. (*c*) Baumé. (*d*) La Metherie. (*e*) Maquer. (*f*) Wiegleb and Gren.

substances that which is the least saturated with phlogiston, and consequently it manifests a considerable power of attraction for phlogiston. But by this combination, it is deprived of its property of supporting the life of animals, and producing the combustion of bodies. It is changed into phlogisticated air, or that species of it, in combination with which it forms the atmosphere. In this state, however, it is reduced to an incomparably smaller volume and weight than it before possessed; because phlogiston being a body of a *negative specific gravity*, it possesses the power of rendering positively lighter all such substances as enter into combination with it.

From these assumed properties of phlogiston, it has been maintained by its advocates, that the increase of metals during calcination originates from the same cause, but that the metallic calxes suffer a diminution of weight in their regeneration; as, in the former case, they lose that substance which rendered them absolutely lighter than their own earthy base; and, in the latter, this base again recovers the principle of specific gravity, and they must therefore necessarily lose a part of their weight.

Inflammable air consists of *water* combined with *phlogiston*, and rendered elastic by matter of heat. It will always and necessarily arise, when water enters into contact with those bodies which it has power to deprive of their phlogiston. But in these cases the water, which is an *elementary substance*, is not decomposed, as it only enters into a new combination, and changes its form.—Water therefore must always be produced in the explosion of this air; because those substances become disengaged, which rendered the latter inflammable and gasiform, that is to say, an elastic fluid.

The *carbon*, or charcoal, is a compounded body which consists of *phlogiston* and *aërial acid*. The latter therefore is no new production, but rather an eduction.

Sulphur and *phosphorus* consist of their own *peculiar acids* and of *phlogiston*; by depriving them of the latter, the former become disengaged, and appear in a free or uncombined state.

Whatever advantages this modification of the phlogistic system seemed to possess, when compared with the doctrines of Stahl, it was found to be in many respects, unsatisfactory, and ill-qualified to resist the attacks incessantly urged by the opponents of phlogiston. The hypothesis respecting negative specific gravity, although ingeniously contrived, was particularly untenable, and its advocates were under the necessity of soon retracting it. The singular opinion of WESTRUMB, that the increase of weight, in bodies which have undergone the process of calcination, must

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be aſcribed to the *hygroſcopic water*, was likewiſe eaſily confuted; ſo that the principal pillars of the ſyſtem being ſhaken to their very foundation, the hypothetical notion of phlogiſton was thenceforth conſidered as fairly overthrown.

Much better founded is the antiphlogiſtic theory, which is now very generally adopted, and of which MAYOW,* an illuſtrious phyſician of this country, had ſketched out the firſt idea, more than a century ago. But unnoticed by his cotemporaries, he either lived or died too early to conſolidate and extend his opinion. Nay, inſenſible of his rare merit, as an original genius in the ſcientific department of phyſics, ungrateful poſterity would perhaps have conſigned his memory to oblivion, had not an acute modern chemiſt, his countryman, Dr. SCHERER, † of Jena, reſcued his ſublime opinions from his neglected writings, and thus erected a proud

* No chemiſt or philoſopher of former ages deſerves more reſpectful mention than MAYOW. He publiſhed *five* remarkable Tracts which were printed at the Hague, in 1681, and dedicated to Henry Coventry, firſt ſecretary of ſtate to Charles II. The firſt is on *ſalt-petre and its nitro-aereal ſpirit*, water-ſpouts, lightning, &c.; the ſecond is on *reſpiration*; the third is on the *reſpiration of the fœtus in the womb and in the egg*; the fourth is on *muſcular motion*; and the fifth, on *the rickets*. Whoever examines his fifth plate, will ſee, that inverted jars of air, and animals within them, were uſed in his experiments; and that he knew the uſe of the double convex lens, to ſet fire to ſubſtances confined in given quantities of air. Such a man, we think, ſhould be called an *experimental philoſopher*; and the more ſo, as ſome parts of his apparatus appear to be as well contrived as thoſe of the preſent day.

Mayow publiſhed truths, for which the minds of his cotemporaries were not prepared. His luminous reſearches were given to the world about a century too ſoon. They were loſt;—and the finding them, and making known their contents, conſtitute one of the many claims of Dr. Beddoes to public eſteem.

Medical Repoſitory, Vol. II. p. 194.

† This promiſing young chemiſt has acquired conſiderable and well-merited celebrity, partly by the ingenious chemical lectures he has, till lately, given in the Univerſity of Jena, where he was admitted public lecturer, in the twenty-ſecond year of his age, and partly by ſeveral excellent publications in chemiſtry, chiefly adapted to the capacities of popular readers, or calculated to afford an elementary view of the antiphlogiſtic theory. In winter, 1797—8, he viſited England and Scotland, where I had the good fortune of becoming perſonally acquainted with him. He travelled by appointment of the reigning Duke of Saxe-Weimar, a prince of the moſt accompliſhed literary talents, and a true Mecænas of neglected merit. Scherer now enjoys a handſome ſalary, in the capacity of Counſellor of mines to the Duke, and Superintendant of the mineral works eſtabliſhed in the Duchy of Weimar. Having exerted himſelf for three or four years in the abovementioned Univerſity, to render his "*Experimental Courſe of Chemiſtry*" equally intereſting and uſeful to the ſtudents of all profeſſions; and having met with very indifferent encouragement (on account of his not being *profeſſor appointed with a ſalary*; ſo that, according to his own words, in winter 1796 he had only *ſixteen* pupils, at a fee of about two guineas each, for a courſe of Lectures continued

a proud trophy to a name which is now juſtly intitled to immortality in the annals of chemiſtry. But, before this apotheoſis was beſtowed on the manes of Mayow, Lavoiſier, one of the moſt acute and inquiſitive men that France ever gave birth to, had ingeniouſly applied the conjectures of our countryman; and this with very ſingular ſucceſs. It is highly probable that the aphoriſms of Mayow, (after he had confirmed and eſtabliſhed them by the teſt of experience), inſpired him with the idea, to conſtruct a new ſyſtem, which ſhould effectually and for ever ſuperſede that of phlogiſton. Gifted with an accompliſhed, penetrating, and unprejudiced mind, Lavoiſier appears, in moſt points, to have cloſely conſulted, and as it were interrogated nature, in the formation of his admirable ſyſtem. The foundation of it is eſtabliſhed by facts founded on the moſt accurate experiments, and ſo ſyſtematically arranged, that the ſtudent of chemiſtry is equally captivated with the indications of his profound perſpicacity, and with the excellent and elegant manner in which he connects and illuſtrates his propoſitions. We ſhall here endeavour to exhibit the moſt ſimple outlines of Lavoiſier's "*New Syſtem of Chemiſtry*," and point out its excellence, by comparing it with others of a later date.

☞ *On account of the great variety of important articles which have come to hand, we are under the neceſſity of poſtponing the continuation of this intereſting eſſay to our next, and probably ſeveral ſubſequent numbers.*

continued through *ſix months, two hours every day!*) we rejoice in his releaſe from ſo unprofitable and ill-rewarded an undertaking. Theſe difficulties, however, have not been without their concomitant good effects; for, during this period, Scherer employed great part of his leiſure in the more minute inveſtigation of various unſettled chemical ſubjects, and in publication of three chemical works of uncommon merit, as elementary treatiſes. It was principally from theſe, he derived the greater part of his ſupport, as he had been cruelly neglected by his wealthy relations, who originally educated him for the church. Thus, indeed, all his talents were called forth, and uſefully exerted in the cauſe of a ſcience, which is indebted to him for many ſagacious hints and accurate illuſtrations—if not for original diſcoveries.

With reſpect to his merit in pointing out the extraordinary marks of original genius and talent, which were buried for a century in the writings of Mayow, we ſhall not attempt to decide whether he, or Dr. Beddoes, deſerve the credit of having introduced Mayow to public notice and eſteem.

For the literary engagements and purſuits of Dr. Scherer, we refer the reader to the notice given of his lateſt publications in our Journal, under the head *Medical and Phyſical Intelligence*.

W.

On

On the Utility of medicated Frictions in obstinate Disorders:—By Professor BRERA, *of Pavia.*

IT is an admitted fact, that medicinal substances may be introduced into the human system through the pores, by means of the lymphatic or absorbent vessels; and that this mode of applying powerful medicines, without any co-operation on the part of the digestive organs, has been attended, in a variety of instances, with many and singular advantages. Is it not, therefore, matter of surprize, that this simple and beneficial process, with which it appears the ancients were familiarly acquainted, and which they continually practised in their medicated baths, should have become almost totally neglected by the moderns, if we except mercurial frictions in cases of lues?

Prof. BRERA, convinced by a number of experiments of the superior efficacy which the external application of different medical substances possesses over that of burthening the stomach with heterogeneous compounds, has lately published a third edition of his "*Programma del modo d'agire sul corpo umano per mezzo di frizioni fatte con salive, &c.*" * in which he communicates some judicious observations derived from his own experience on this important subject, together with the result of the inquiries of other respectable physicians in Italy. According to the former of these, which he had frequent opportunities to repeat on different patients, afflicted with similar disorders, he acquaints us, that, for instance in the gout, he has successfully employed frictions with an ointment compounded of the *aconitum napellus* LIN. opium, and saliva; in dropsical cases, he has recommended with equal benefit a mixture of the squil, or digitalis and saliva; to febrile patients, whose *primæ viæ* were obstructed, he directed the external application of the antimonium tartar, freely blended with saliva, or any animal fat, as hog's-lard, &c.; and thus (adds the Professor) the causes generating these diseases were sooner or later happily removed.

We shall just observe here, that our expectations are not very sanguine respecting the success likely to attend any *new* remedies or methods of cure, which a fertile invention may yet contrive: from deliberate conviction, we are of opinion, that the practice of medicine will be greatly more benefited and improved by an accurate diagnosis and nosological description of diseases (in both of which we come short perhaps of the ancients), than by the most promising discoveries in the Materia Medica, and the doctrine of therapeutics.—As it appears, however, that Prof. Brera's

* The learned Professor has also reprinted the *second* edition of this interesting practical essay in the "*Commentarii Medici*," of which he is the editor.

Brera's ſuggeſtions and experiments have been adopted and pretty extenſively followed up by ſeveral gentlemen who rank high as Italian phyſicians, and of whom we ſhall only mention the names of BENVENUTI, LOCATELLI, and BOTELLI, who have directed ſimilar medicated frictions in caſes of gout and dropſy, as alſo in diſorders accompanied with acute pain between the falſe ribs, convulſive coughs, &c. and that they have completely cured, or at leaſt conſiderably relieved the ſituation of ſuch patients; we are induced to recommend this method to the attentive inveſtigation and trial of the medical practitioner in Britain.

The ingenious Profeſſor concludes with the following obſervation, that medicated frictions will in all probability be found moſt ſucceſsful in the treatment of diſeaſes to which youth and infancy are ſubject, in caſes of hydrophobia, &c.—for the corroboration of which, however, we do not find that he refers to any practical inſtances.

On the practical Study of Botany, by means of Chemical Analyſis:—Chiefly abridged from the original Papers of Dr. S. F. HERMBSTAEDT, *Profeſſor of Chemiſtry and Pharmacy, at Berlin.*

WHEN we contemplate the wonderful relation between cauſes and effects, every where ſubſiſting in the works of Nature; when we compare the infinitely diverſified ſtructure of organized bodies with that of inanimate matter, our aſtoniſhment increaſes in proportion to the extent of our reſearches, and we are involuntarily led to diſcover a certain order and regularity, in ſpace and time, prevailing throughout the whole ſyſtem.

The moſt ſuperficial obſerver is forcibly ſtruck with the admirable ſucceſſion of plants, uniformly correſponding in their appearance, riſe, growth, &c. with the different ſeaſons; and although this *ſpontaneous* periodical effort of nature appears to be excluſively devoted to *vegetable* ſubſtances, it may ſometimes be traced, in a faint degree, even to the boundaries of the animal kingdom. Indeed, the line of demarcation between animal and vegetable life is but ſlightly marked, ſo that it remains to this day a matter of doubt, whether ſome of the marine plants, as well as the moving plant (*Hedyſarum motitans*, LINN.), and ſeveral ſpecies of *Tremellæ*, are not to be conſidered as ſubjects of the animal, rather than of the vegetable kingdom.

Although the *animal* world be likewiſe governed by fixed laws, relative to the ſize and form of bodies, yet it may be aſſerted that nature here has

has reſigned part of her authority to the will and inclinations of the creature:—neither the ſucceſſive periods of propagation, nor the limits of duration, are diſcriminated with the ſame accuracy as is perceptible, in every ſeaſon, in the vegetable world.

The *mineral* kingdom, with all the riches, beauties, and ſportive productions it contains, is the leaſt perfect of the three; as the principal circumſtance which characterizes this part of nature's wonders, conſiſts in the peculiar ſtructure and exact form of cryſtallizations, the ſize of which is as indefinite as their origin is accidental, ſo that the formation of cryſtals apparently depends more upon *chance*, or a ſort of whimſical combination of circumſtances, than upon the premeditated deſigns of nature.

It is well-known to every chemiſt, what an endleſs variety of cryſtallizations may be produced artificially, by combining different ſalts and acids with each other, and cauſing them again to cryſtallize. We can, in ſome degree, imitate this proceſs in vegetable ſubſtances, and thus likewiſe artificially multiply the variety of plants and trees; but the genera and ſpecies are not ſubject to laws, either arbitrary or accidental, as they muſt neceſſarily remain in the ſtate appointed them by nature, unleſs diſpoſed otherwiſe by the hands of men.

From theſe deſultory reflexions we may rationally infer that the inveſtigation of plants and trees, with a view to obtain a more perfect knowledge of their regular organic ſtructure, juſtly deſerves the attention of every inquiſitive mind. Curioſity alone is, with ſome perſons, a ſufficient inducement to apply themſelves to the ſtudy of botany, the moſt charming part of Natural Hiſtory. ROUSSEAU expreſſes himſelf, on this ſubject, with his uſual happy diſcernment, in the following words: "I am perſuaded," ſays he, "that at all times the ſtudy of nature checks the ardour for frivolous amuſements, prevents or aſſuages the tumult of the paſſions, and provides the mind with a moſt ſalutary nouriſhment, by filling it with an object worthy of its contemplation."

But the principal advantages to be derived from a *proper* ſtudy of this delightful ſcience, are not merely thoſe of affording pleaſure and innocent occupation to the mind, as eloquently urged by the philoſopher of Geneva; they are of a ſtill more extenſive and *practical* nature, and claim the attention of all claſſes, and even of every member of the community.

It certainly muſt afford us a degree of rational entertainment, when we are enabled to diſtinguiſh the variegated productions of vegetable nature, as to their form, ſtructure, ſize, native ſoil, and other circumſtances connected with the periods of their birth and diſſolution. Thus we learn to arrange them into claſſes, orders, genera, and ſpecies; to point out, in the

ſyſtem,

ſyſtem, the exact place of every new plant which may yet be diſcovered, and hereby ſave ourſelves much trouble and confuſion. This however may be termed merely ſcholaſtic, or a mechanical kind of knowledge, ſo long as we remain ignorant of the various conſtituent parts of the plants themſelves, and the many important uſes and purpoſes to which they may be daily applied in rural, domeſtic, and medical economy, as well as in ſome of the moſt valuable departments of the arts and manufactures.

The late diſcoveries in chemiſtry have ſufficiently ſhewn, that the component parts of vegetable bodies are of a very compound nature, and that conſequently their *chemical analyſis* requires a greater degree of accuracy and perſeverance, than has hitherto been beſtowed on this important branch of phyſics. We ſhall find upon a cloſer inquiry into the nature of vegetable productions, that we muſt recogniſe or admit ſuch a number of *diſtinct elementary principles* as we can diſcover and exhibit to the ſenſes by well-conducted experiments. For, if certain parts which enter into the compoſition of plants, can be ſeparated from them in a great variety of inſtances; if they are manifeſt to the obſerver, not only as diſtinct ſubſtances, but alſo as chemically related to other bodies—we have in that caſe, doubtleſs, a right to conſider them as diſtinct elementary parts. Such a diſtinction of the various uſeful ingredients with which nature has richly provided her vegetable children, is of eſſential conſequence; as it will lead us in many caſes to determine with accuracy their reſpective uſe and value. But, as their utility is not confined to *medicinal* purpoſes *only*, it will be neceſſary to take a more comprehenſive view of the ſubject under conſideration, and to arrange our materials more ſyſtematically than our predeceſſors were inclined or able to do, from their acknowledged deficiency in chemical knowledge.

The *bare* arrangement of vegetable productions, together with the moſt perfect acquaintance with the names and *botanical* characters of plants, is an acquiſition of only relative value, conſidering the ſtudy of botany in a *practical* ſenſe; that is, ſo far as it is more immediately connected with the uſeful purpoſes of life. In this reſpect, an immenſe treaſure at once opens to our view. And it may be confidently aſſerted, that botany is of greater practical utility than any other ſcience; for, if the knowledge of vegetable ſubſtances be eſtabliſhed upon a *chemical baſis*, it may be rendered ſubſervient to the moſt important purpoſes; a truth which will be amply demonſtrated by the following reaſons and illuſtrations.—No ſacrifice of time and labour will be found adequate to the important advantages, which may be derived from an accurate analyſis of plants, and their extenſive application to health, œconomy,

œconomy, and the arts of dying and painting, weaving, brewing, diſtilling, tanning, ſoap-making, &c. &c.: indeed, theſe advantages are not limited to any particular claſs or rank of ſociety; they are as manifold and beneficial, as the productions of the vegetable kingdom are in themſelves wonderful and innumerable. The infinite variety of experiments that can be inſtituted with vegetable ſubſtances, as they are highly gratifying to the laudable curioſity of minds of an inquiſitive and ſcientific turn, ſo are they equally intereſting, for profitable purpoſes, to the huſbandman, the artiſt, and the manufacturer; while the young and the gay alſo find their account in them, as they tend in a great meaſure to controul the rage for diſſipation, and gradually to habituate the admirers of nature to more ſerious and uſeful purſuits. To prove and eſtabliſh what is here advanced, we propoſe to exhibit the various *primary* and *ſecondary* conſtituents of vegetable bodies, together with the *acids* which may be obtained from them, in *three* ſeparate *tables*. And after having indicated theſe particulars, we ſhall endeavour to furniſh the reader with a *complete* liſt of chemical teſts, or re-agents, by means of which the preſence or abſence of certain ingredients or properties, inherent in the various parts or productions of plants and trees, may be moſt effectually diſcovered, and their proportionate quantity aſcertained with preciſion.

TABLE FIRST.

Primary Elements of Vegetables which can be ſeparately exhibited as Objects of Senſe, without undergoing any Change of their native or inherent Qualities.

1. THE ſubſtance of *Gum*, (as being different from mucilage and reſin,) for inſtance, the pure *Gum Senegal*, which is obtained from the *Mimoſa Catechu, Linn.* and which by the old chemiſts was improperly called *Terra Japonica*.—The pure ſubſtance of this gum agrees with that of every plant, if obtained in a pure ſtate; it is perfectly ſoluble in water; the inſpiſſated ſolution of it may be drawn in threads, and it is, upon the whole, extremely glutinous.

2. *Mucilage.* Nature furniſhes this ſubſtance, in a pure ſtate, in the *Aſtragalus Tragacanthus, Linn.* (or more properly the Aſtragalus *Creticus*,) which is to this day erroneouſly called *Gum Tragacanth*, although it affords by no means a perfectly tranſparent ſolution in the pureſt water; on the contrary, it remains always opaque, does not feel glutinous but ſlippery between the fingers, and cannot be drawn in threads. The farinaceous or mealy part of vegetables, in its *pure* ſtate, is likewiſe a mucilaginous ſubſtance; it ſhould be obſerved, however, that true meal always implies and contains ſtarch, *Amylum*, which forms the principal part of the farina.

3. True

3. True *Reſin*, the characteriſtic of which is, that it makes a perfect ſolution in ſpirit of wine, or vitriolic ether. The *pure* ſubſtance of reſin is of an homogeneous nature in all inſtances, ſo that the foreign ingredients occaſionally found in different reſins, conſtitute all the difference obſervable in them.

4. *Soap*, or ſaponaceous matter, a neutral ſubſtance between gum and reſin.—This name ſhould be excluſively appropriated to a certain principle in plants, which is ſoluble in the pureſt water, as well as in the moſt rectified ſpirit of wine, but is not acted upon by vitriolic ether. Thus, the conſtituent parts extracted from ſaffron almoſt entirely conſiſt of ſaponaceous matter, which is a very copious ingredient in the compoſition of vegetable bodies; but, on account of its eaſy ſolubility, both in water and ſpirits, it has hitherto been as often confounded with reſins as with gums. It is one of the moſt general conſtituents of vegetables, and hence promiſes conſiderable advantages to the manufacturer of this article, as it is no leſs ſubſervient to the purpoſes of domeſtic economy.

5. *Sugar*, or the ſaccharine principle. It exiſts in all vegetable ſubſtances of a ſweet taſte, but is ſo intimately blended with gummy, mucilaginous and ſaponaceous matters, that it cannot be ſeparated from them without ſome difficulty.

6. *Albumen*, firſt ſo named by Fourcroy, on account of its exact reſemblance to the white of eggs. It is found principally in creſſes, ſcurvy-graſs, hemlock, and moſt abundantly in the antiſcorbutic and narcotic plants, where it generally reſides in the leaves. Its preſence may be eaſily diſcovered, by mixing the freſhly-expreſſed juice of theſe plants with ſpirit of wine, or by macerating them in hot water, nearly to the boiling point: in both theſe caſes the albumen will coagulate and ſeparate itſelf from the other fluids in the form of cheeſy matter.

7. *Oil*, or the baſis of every etherial and diſtilled oil. It differs from the following ſubſtance (No. 8.) merely in the proportion of its conſtituent parts. According to the opinion of Hermbſtaedt, the baſis of vegetable *oil* is carbon and hydrogen only; whereas that of *fat* conſiſts of carbon, hydrogen, and oxygen. Vegetable fat may be converted into oil by means of dry diſtillation; but, whether the baſis of oil does not alſo contain the *odoriferous* principle in vegetables, or whether this be combined with ſome other element (ſuch as that of *Boerhaave's Spiritus rector*) is a point not yet determined, and remains to be illuſtrated by future experiments.

8. *Fat* is the baſis of every vegetable oil. The difference between oils and fats, in general, conſiſts merely in the foreign ingredients with which the

the matter of fat is combined. The oil of almonds, and the butter of cocoa, in the opinion of our author, are both of them ſubſtances purely fatty, and they differ only as to the degrees of conſiſtency.

9. *Camphor* has hitherto been conſidered as a peculiar ſubſtance, different from all other vegetable matter, though in its properties it moſtly reſembles the oleaginous bodies. Some vegetables contain, beſides the matter of oil, a conſiderable portion of camphor in their conſtituent parts; the preſence of which may be frequently diſcovered by an odour and pungent taſte, accompanied with a ſenſation of coolneſs on the tongue; this is found in the peppermint, ſage, cardamom, and other ſubſtances.

10. *Wax* appears to be different from the matter of fat, in the ſame degree as oil is from that of camphor. The preſence of wax is diſcoverable in a much greater number of vegetables than has hitherto been ſuppoſed; it may be obtained from the leaves of moſt plants and trees, as is manifeſt from their ſhining cover or varniſh, which generally conſiſts of waxy matter. It is alſo met with as a conſtituent part of ſeveral ſorts of reſins, and may be ſeparated from gummy, mucilaginous, and ſaccharine matters, by means of mere water; from ſaponaceous ſubſtances, by water or ſpirit of wine; and from reſinous bodies, by means of vitriolic ether.

11. *Elaſtic Gum.* Although this name is by no means the moſt eligible, it muſt remain here until we can ſubſtitute a better. This valuable ſubſtance, which undoubtedly forms a conſtituent part of many vegetables, appears to be moſt intimately combined with the matters of reſin, albumen, and fat; hence it is extremely difficult to diſengage it from them by art. Its proper ſolvent is a pure vitriolic ether; but a ſtill better one has been diſcovered lately, which is rectified *petroleum*, or rock oil; in this it is perfectly ſoluble, and may again be ſeparated from it, by ſimple diſtillation with water. In the analyſis of vegetable bodies, the elaſtic gum has till lately been almoſt entirely overlooked.

(To be continued in our next Number.)

MEDICAL

MEDICAL AND PHYSICAL

INTELLIGENCE,

(Original and Selected.)

THE *yellow fever*, whoſe ravages within a few years paſt have been ſo often deplored, has lately renewed its baneful viſitation in the United States, to a greater extent than hitherto remembered, and with multiplied horrors. The northern, ſouthern, and weſtern parts of the Union have for the moſt part been ſo fortunate as to eſcape this calamity. The commercial towns ſituated to the eaſtward of the bay of Cheſapeak, and the river Suſquehanna, have been the principal ſcene of ſuffering. Portſmouth, in New Hampſhire, Boſton, New London in Connecticut, New York, Philadelphia, and Wilmington, in the ſtate of Delaware, beſides ſome other places of inferior conſideration, have largely ſmarted under this epidemic ſcourge. Portſmouth and Peterſburgh in Virginia, were the only places weſt and ſouth of the Cheſapeak and Suſquehanna, ſo far as we yet know, where the fever raged with violence. In all theſe towns the ſickneſs and mortality have been conſiderable; and, in addition to theſe, the conſternation and flight of the inhabtiants, and the derangement and ſuſpenſion of buſineſs, with all the concomitant evils and inconveniencies, have greatly contributed to increaſe the public diſtreſs.

Although the month of June and July, with the exception of a few days, had been moderate, cool, and rainy, the weather totally changed in Auguſt, when it exhibited ſuch a degree of heat, in point of duration and ſteadineſs, if not of ſeverity, as is very ſeldom witneſſed in that climate. Throughout a great part of September, the heat continued with little ſign of abatement; even much of October was unſeaſonably warm; and the froſt did not properly ſet in till a later period of the ſeaſon than uſual.

This epidemic generally appeared early in Auguſt; through the remainder of which month, as well as September, and great part of October, it continued to rage with undiminiſhed violence: it was not until the latter end of October, although in ſome inſtances earlier, that a ſenſible abatement in the number of its victims had taken place; and in the firſt weeks of November, the diſorder entirely ceaſed. During this ſhort interval, thouſands of uſeful citizens were prematurely cut off, among whom we have to deplore the loſs of not leſs than ſixteen phyſicians, and particularly that of the learned and univerſally reſpected Dr. E. H. Smith, of New York.

It is with great ſatisfaction that we can at length announce the diſcovery of a *more ſucceſsful method of treating the Yellow Fever*, in America, than any which has been hitherto attempted. We learn from the report of Meſſ. Iſaac Rand and John Warren, relative to the anatomical diſſection of bodies dead of the late malignant Epidemic at Boſton, which report is ſigned September 8th, 1798, that, after proper evacuations, the uſe of calomel has been found generally ſufficient to anſwer the above important purpoſe. This

medicine

medicine has been accordingly administered to fifteen patients, within eighteen days; all of whom, excepting one, have either recovered, or have past the dangerous crisis of the disorder. It has been given, not in the usual doses, for the purpose of an evacuant by the intestines, but in small doses of one, two, or three grains every hour or two, so as to produce a salivation as soon as possible; with this view from 100 to 230 grains of calomel have been taken by the patient, in the course of three or four days, commencing the use of it immediately after the first copious evacuations by bleeding and purging; and, in every instance, as the salivation came on, the disease has been observed to abate.

As coinciding in sentiment respecting the use of mercury, so as to produce a salivation, (in the treatment of the yellow fever) we with pleasure mention the learned Dr. Rush of Philadelphia. But this method is still more explicitly pointed out, and more highly recommended by James Clark, M. D. F. R. S. E. in a treatise on the yellow fever, on the appearance of that contagious malady, in the island of Dominica, in the year 1790, 94, 95, and 96.

The Doctor recommends the free use of mercury, both as a remedy and a preventive—His words are, "The officers of the army and navy, who have leisure and can be prevailed upon, on their arrival in the West Indies, to undergo one or two courses of mercury, take a few laxative medicines, after confining themselves to a moderate use of wine, and living chiefly on vegetables and fruits for the first two months after their arrival, may rely, almost to a certainty, on escaping the fever.

In a *Meteorological Journal*, accompanied with remarks on the diseases of the season and their treatment, published by that accurate observer, Dr. Shadrick Ricketson, of Dutchess County, we find the following, among other curious and interesting observations, on the three spring-months, towards the close. "It may not be wholly foreign or improper to remark, that *horses* were very generally and severely afflicted this spring (1797) with the common distemper in the glands of the head and throat; for it has frequently been observed that horses and dogs have been affected as concomitant, or presaging, epidemic or pestilential diseases; but, whether the present or a future sickness is to follow, I leave for future observation to determine."—In concluding his remarks on the weather and diseases of the last summer, the Doctor says: "In my last I mentioned that horses were severely afflicted with their common disorder, which has continued to be the case, but not so generally; and I may now add that *dogs* have been in like manner violently disordered with a cough, &c. during the greatest part of the summer."

Mr. Webster's *History of Pestilential Diseases*, particularly with a view to ascertain and describe those of America, is now in the press at New York.—The design of this publication is, to collect the principal facts which regard the origin, progress, and declension of pestilential epidemics, in general; together with the remarkable phenomena of the natural world, such as unusual seasons, contagious diseases among animals, uncommon appearance of insects, and other preceding or concomitant events which may probably have some connexion with the latent causes of pestilence; in order to obtain, if possible, some well-grounded knowledge of the sources from which proceed the wide-wasting diseases which afflict mankind. A great number of curious facts are combined, and it is believed they will throw much light on this melancholy subject, of such important concern to the commerce of our cities, and to the lives and happiness of mankind.

We

We obſerve, with no ſmall ſatisfaction, the re-publication, in Philadelphia and Boſton, of the *Eſſays* of the philanthropic American, Count RUMFORD; a work which merits a place in the libraries, and even in the hands of all who ſincerely wiſh to promote the proſperity of their country, and the happineſs and proſperity of their fellow-mortals.

A ſecond volume of Dr. TROTTER's *Medicina Nautica* is now in the preſs, and will be publiſhed early in March. This volume, we underſtand, contains an extenſive correſpondence with naval ſurgeons in different parts of the world. The diſcuſſion of the extirpation of contagion is reſumed, and much freſh evidence is adduced of the inefficacy of the nitrous gas, and all ſpecies of fumigation in this proceſs. A ſummary of Profeſſor Mitchill's doctrine on *Peſtilential Fluids* is given in an Appendix, ſelected from American Papers, tranſmitted to the Board of Admiralty by his Majeſty's Conſul General.

This doctrine directly oppoſes that of Dr. J. C. Smyth, and agrees in a great part with the practice of the naval phyſician, whoſe ſucceſs in the ſhips of the fleet, it muſt be confeſſed, has been ſuch as to make infection no longer formidable.

Mr. G. CORNELLI, of Cologne, ſome time ago publiſhed a treatiſe (in German,) *On the Diſadvantages attending the common Proceſs of diſtilling Vinegar, &c.* in which, among other ſubjects, he endeavours to prove, that vinegar, when ſuddenly evaporated on hot bricks, or iron, for the purpoſe of fumigating ſick and bed-rooms, inſtead of purifying the corrupted air in ſuch places, has rather a contrary tendency. Hence, by the uſual method of evaporating vinegar, the air becomes tainted with a great proportion of carbonic acid gas, one of the moſt irreſpirable ſpecies of air. The author, therefore, adviſes to place the vinegar, in ſome ſhallow veſſel, upon a moderately warm part of an oven or ſtove; but, as theſe are rarely uſed in Britain, the purpoſe may be fully anſwered, by placing a tin veſſel containing vinegar over a faint lamp, at ſuch a diſtance as to keep the vinegar near the boiling point, and thus communicating an equal degree of heat to the veſſel fixed above the lamp.

Since the death of the celebrated Deſſault, in 1795, M. PELLETAN has been, and ſtill is, the principal ſurgeon at the *ci devant Hotel Dieu.* now called *Hoſpice de l'Humanité*, at Paris. This ſtupendous aſylum for afflicted peſons of every deſcription, contained, previous to the Revolution, a ſufficient number of beds to accommodate at leaſt 2000 patients. And although this number is conſiderably leſs at preſent (a remark which equally applies to the population of Paris and the country of France at large); yet this reduction, with reſpect to the hoſpitals, is attended with one moſt important advantage, that there is no neceſſity, at preſent, to croud ſeveral individuals into one bed, or as a late traveller ſarcaſtically expreſſed it, " to pickle them together like herrings in a caſk."

The ſecond ſurgeon is GIRAUD, a worthy pupil of the late Deſſault; in the ſix winter-months he delivers a regular courſe of lectures on anatomy and ſurgery, while Pelletan only makes occaſional diſcourſes and remarks on the clinical patients under his care. Giraud is an excellent and ſucceſsful operator, and is aided by a number of pupils, who partly reſide altogether in the hoſpital, and partly repair thither to viſit the patients, and to aſſiſt at the daily operations. The latter are called *Externes*, and the former,

former, *Internes,* who keep a regular journal of the patients, as well as of the remedies preſcribed, and are ſtyled *Chirurgiens de Garde,* having each of them a ſeparate hall or ward of patients intruſted to their proviſional care. Prior to the new order of things, the nuns waited on the patients in the character of nurſes, and had, upon the whole, an almoſt unlimited ſway in the houſe; latterly, however, their influence has declined, or is in a manner loſt, and they are now reduced to their original condition of waiters on patients, and are obliged to conform to the ordinary apparel of females. It ſhould be obſerved, however, that the ſuperintendance of the midwifery-ward in the houſe appertains to them excluſively; and they execute their truſt in ſo ſtrict a manner, that no male viſitors whatever are admitted there, not even the *chirurgien en chef,* unleſs his aſſiſtance be eſſentially and expreſsly wanted, and called in by the nuns.

Notwithſtanding the numberleſs chirurgical operations occurring here every day in the year, it is believed that the pupils or viſitors derive no very great benefit from their attendance. The beds of the patients are placed too cloſe together; there is no particular room appropriated to the operations, which, ſtrange to tell, are performed on the very beds of the ſufferers; the number of pupils and attendants preſent, together with the prodigious buſtle, throng and noiſe—all theſe circumſtances conſpire to leſſen the benefit which a viſitant, particularly a foreigner, might otherwiſe receive in attending the Grand Hotel Dieu.

Another clinical eſtabliſhment in Paris, of leſs magnitude, but much greater practical utility to the ſtudent, and infinitely better adapted to the purpoſes of cleanlineſs, as well as the performance of chirurgical operations, is that which formerly was known by the name of *la Charité,* but now by that of *Hoſpice de l'Unité.* The wards of this hoſpital are not ſo crowded with patients; the beds ſtand at a convenient diſtance from each other, and the number of ſtudents is not ſo great as in the *Hoſpice de l'Humanité.* Generally, about one hundred chirurgical patients are admitted here. The principal ſurgeon of this hoſpital is *Deſchamps,* who being advanced in years, allows *M. Boyer,* who is likewiſe appointed one of the principal ſurgeons to the houſe, and an eminent pupil of Deſſault, to perform moſt of the operations. Deſchamps had formerly much and ſucceſsful practice in lithotomy. He has lately publiſhed a large treatiſe on this ſubject, and has alſo acquired conſiderable reputation by a newly-invented inſtrument, which is now employed with great advantage in the operation for the popliteal aneuriſm.—Boyer is univerſally allowed to be the moſt ingenious of Deſſault's pupils; he is not only an excellent operator, but he is ever apt and ready to inſtruct others, who addreſs themſelves to him with confidence, without diſplaying his great ſuperiority, or diſpatching the queſtions of his pupils with categorical and evaſive anſwers. His anatomical and chirurgical lectures, as well as his work lately publiſhed on theſe ſubjects, are intitled to much praiſe for correctneſs of language and perſpicuity of demonſtration.—Although he was, for ſeveral months, proviſionally appointed firſt ſurgeon to the Hotel Dieu, after the myſterious death of Deſſault, yet, notwithſtanding his great merit, he could not obtain this ſituation as a permanent office: *Dii non ſic voluere.*

It is a ſingular fact, that even in France, where ſurgery has been ſo ſuperiorly cultivated for centuries paſt, we meet with ſurgeons who are in a manner ſtrangers to the treatment of internal diſorders, or who at leaſt do not interfere in the management of any other but what are ſtrictly called ſurgical patients. If, therefore, it ſhould happen that a violent fever ſuper-

vene in any chirurgical case, or after an operation performed by a surgeon, a physician is necessarily called in, who frequently prescribes medicines according to the present febrile symptoms, without paying due regard to the external condition of the patient.—Such distinctions however, between two inseparable branches of the same profession, can never be productive of salutary consequences, but rather must have an obvious tendency to check the practical progress of both.

The "*Annales de Chimie*" of the 30th Frimaire, (December 20, 1798) contain an interesting Memoir read by FOURCROY in the medical school at Paris, "*On the application of pneumatic chemistry to the practice of medicine, and on the medical properties of oxygenated substances.*"

Our limits will not permit us, in this Number, to give an abstract of this elaborate essay, and to do it that justice which its merits, and the celebrity of its author demand. We shall therefore confine ourselves to extract what C. Fourcroy calls his "*profession de foi.*"

After an appropriate introduction, alluding to the practical advantages resulting from new chemical discoveries, and the good effects to be expected from them in medicine, he thus proceeds: "But if I confidently announce the hope of a happy and approaching revolution in the art of healing, I ought, while I appear to encourage such a change, to resist the dangerous consequences of that petulant activity, which inflames instead of enlightening the mind; of that premature love of innovation, which is eager to destroy without being able to raise any structure on the scattered ruins; I fear, I confess, as much from these imprudent innovators, as I apprehend from the zeal of the adherents to old systems. If the latter set their faces against the progress of reason, the former are anxious to precipitate themselves into errors, by exaggerations not less dangerous. I am equally an enemy to the innovating folly of the one, and to the dull inactivity of the other. I reject the pretended sufficiency of the Brunonian doctrine for every medical theory, as well as the indiscreet attempt of explaining every where the mechanism of animal life, by a chemical action. I undoubtedly am desirous of a revolution in the theory of medicine; it is the object of my prayers; I have foretold it these fifteen years in my lectures; I have every where proclaimed it in my works; I shall forward its progress with all my power and abilities:—but I wish for a revolution, wise, moderate, and reflecting. I do not burn the old books, with Paracelsus; I do not break the pneumatic vases; I do not at once proscribe every species of medical knowledge; I preserve all that exists, and do not sacrifice this knowledge to any new applications, or to a doctrine hitherto built upon sand. It would be injudicious to abandon what we have industriously acquired; to extinguish at once the light kindled by long experience; and to exchange it for that *theoretical empiricism*, which directs the medical practitioner to embrace a phantom.

Dr. SCHERER, whose merits in chemical science have already been noticed, p. 69. of this Journal, has lately commenced a periodical work which, by his extensive correspondence with the most celebrated European chemists, appears to possess considerable advantages over all publications of a similar nature. This work is intitled the *Universal Chemical Journal*, and is published in numbers, every month, by Breitkoptf and Hartel at Leipzig;—it promises to become one of the most valuable vehicles of physical and chemical knowledge on the continent.—Dr. Scherer has also announced another publication he is preparing for the press, intitled "*Inquiries into the nature and application of every species of manure hitherto known; instituted by the members of the Board of Agriculture in London.*"

It is with great satisfaction we can announce to our readers that the fourth and last volume of the "*History of Medicine*," (a valuable work begun about seven years ago!) by the accurate and very learned Prof. KURT SPRENGEL, of Halle, will make its appearance in the month of May next; we may also indulge the hope of seeing speedily a correct translation of it by Dr. ANDREW DUNCAN, Jun. of Edinburgh.—To afford the reader some idea of this very respectable work, alike interesting to the philosopher and the physician, we shall only observe, that in order to write an history of medicine with advantage, it was necessary to collect and bring under distinct points of view, the facts and arguments scattered in a thousand works; to read the writers of different ages and nations, *in the original*; to enter into the spirit of the times when they were composed, and to investigate the history of society and the sciences, in all the branches connected with medicine. This great and laborious undertaking Prof. Sprengel has been able to accomplish; nor has he ever tamely copied from his predecessors, but with indefatigable zeal drawn his knowledge from the original sources.

Two eminent physicians, Prof. JUNCKER, of Halle, and Dr. FAUST, of Buckeburg in Germany, are now (and have been for several years past) actively employed in circulating and preparing for its execution no less important a scheme than that of subduing, and, if possible, extirpating the natural *small-pox*, as a contagious disease, throughout Europe; in a manner similar to that, by which the progress of the plague and leprosy had been successfully checked, for several centuries past.* Many respectable physicians, both in Germany and Italy, are zealously co-operating in this humane and meritorious design, particularly Dr. HUFELAND, of Jena, and Prof. SPRENGEL, of Halle.

We are authorized to state, that the Congress assembled at Rastadt, have taken this subject into serious consideration, although it is in a manner unconnected with the important objects of their mission.

Dr. Faust has lately addressed a printed circular letter to the different public agents convened there; and, much about the same time, another memoir to the same effect was transmitted to Rastadt by Prof. Juncker, although without his previous knowledge of Dr. Faust's spirited address, which was introduced by a gentleman residing there in a diplomatic capacity, and is printed in the German and French languages.

It is fervently to be wished, that the plenipotentiaries may prevail upon the potentates they represent, whether monarchical or republican, to declare war against this formidable enemy to the human race, the small-pox, which, it is confidently asserted by Dr. Faust, destroys, in Germany alone, *seventy thousand persons annually, or nearly* 200 *per day!*

Dr. JOHN ARCHER, of Harford county, Maryland, in America, has found by a number of decisive experiments recently instituted, that the seneka-root (*Polygala Senega, Lin.*) is an almost infallible remedy in Croup, or the *Cynanche Trachealis* of *Cullen*. From a letter lately written by Dr. Archer, and addressed to Dr. Barton, of Pennsylvania College, we shall communicate to our readers the following important particulars:

"I have (says Dr. Archer) in a great many instances found a decoction of the *Seneka* the most powerful medicine in the cure of this disease, and I am happy to tell you that I believe it may be depended on. I make a strong decoction of the root in the following manner, viz. half an ounce of the seneka, in coarse powder, is boiled in eight ounces of water down to four. Of this I give a tea-spoonful every half hour, or hour, as

* The plan itself shall be given in a future number.

as the urgency of the ſymptoms may require, and at intervals a few drops, to keep up the ſtimulus, until it either acts as an emetic or cathartic. I then repeat it, in ſmaller quantities, ſo as to preſerve the ſtimulus of the ſeneka conſtantly in the mouth and throat.

"If the diſeaſe be more advanced, and the breathing more difficult, with a peculiar harſh or ſhrill ſound, like air forcibly drawn through a ſmall aperture, attended with a retraction of the upper part of the abdomen under the cartilages of the ribs: I then give calomel freely and frequently, and rub mercurial ointment on the throat and contiguous parts, ſo as to affect the glands of the throat and mouth, as quickly as poſſible. This I do that the mercury may co-operate with the action or ſtimulus of the ſeneka, and thereby haſten the ſeparation of the membranous ſubſtance formed in the trachea.

"In this method I have ſucceeded in the cure of the croup, even beyond my moſt ſanguine expectations."

Dr. STRUVE, of Gorlitz (who was lately preſented by the Royal Humane Society of London with all their works, for his excellent treatiſes on re-animation, and other ſubjects connected with the philanthropic views of the ſociety) has diſcovered a remedy for the *hooping-cough*, which is intitled to the ſerious attention of practitioners.—After having directed a gentle emetic to be taken by the patient, Dr. Struve preſcribed the following mixture to be rubbed in, every two hours, in ſmall quantities, about the region of the ſtomach. One ſcruple of emetic tartar is diſſolved in two ounces of water, to which ſolution is added one ounce of the ſtrong tincture of cantharides.*—In a great variety of inſtances, the doctor obſerved, that a gentle perſpiration came on during the night, after the uſe of this application; that the violence of the cough immediately abated, and in a ſhort time the ſymptoms totally diſappeared. He does not conſider the emetics alone adequate to produce theſe beneficial effects; but, in combination with the mixture for external application, the diſeaſe ſeems no longer ſo formidable as it has hitherto been. We cannot, however, forbear to caution the young practitioner in the uſe of this and ſimilar heroic remedies, particularly if reſorted to, from urgent neceſſity, in infantile and female diſorders.

Prof. LE ROY, of the ſchool of medicine at Paris, has lately publiſhed an account of a new method of curing eryſipelatous inflammations, and cutaneous eruptions, by the external application of *hot flour*; detailing ſeveral caſes in which that remedy has been ſucceſsfully uſed. For want of room in the preſent number, we propoſe to give a more particular account of this intereſting diſcovery in our next.

According to an account given by Dr. DE WITT, phyſician in the city of Albany, the effects of the *datura ſtramonium*, thorn-apple, appear to be ſo extraordinary that they well deſerve the further notice and inveſtigation of practitioners. The ſeeds of this plant, when eaten or ſwallowed inadvertently, have been found to produce, 1. unuſual pain and anxiety; 2. convulſive motions; 3. apparent dread or averſion to water or fluids of any kind; 4. veſications on the ſkin, after the violent ſymptoms had ſubſided; and 5. large and involuntary diſcharges of urine. Thus, the extremely active and ſtimulating power of this plant, and its violent operation on the human body, would ſeem almoſt to equal the combined force of plague, ſmall-pox, hydrophobia, and epileptic convulſions.

From

* We have no doubt that this compoſition is, *in ſubſtance*, the ſame with ROCHE's Royal Embrocation for the hooping cough.

From a letter of Citizen S. lately published in the "*Annales de Chimie,*" it appears that no less than twenty-seven of his poultry, including a turkey-hen, all died in the course of a few days, in the most dreadful convulsions. Curiosity induced him to open them, when every thing appeared in a sound state, without any indications of the slightest malady; he perceived, however, that the internal membrane of the gizzard was somewhat tough and shrivelled, like most animal substances, when exposed to the action of heat. In all the different subjects the stomachs were luminous; the grains, not fully digested, glittered in falling down to the ground; and those which at first presented no light, almost instantly exhibited both light and the smell of phosphorus, when heated. This convinced Citizen S. that there could be only one cause for all these effects, and that they were all produced by the circumstance of his having four or five days before, thrown out some water through a casement into the Poultry-yard; which water had served to wash and purify several substances, on which operations of phosphorus had been performed. The phosphorus contained in these waters, in a state of nature, he considered as solely occasioning the death of such a number of domestic animals.

The *Chemical Society of Philadelphia* have appointed a committee to collect into *one synoptical view*, all the different processes carried on in different countries, for the purpose of manufacturing *nitre*. They invite all persons who may possess information respecting the mode of producing this valuable *neutral salt*, to forward it to their secretary *(post paid)*. They also request their fellow-countrymen to furnish them with accurate descriptions of the *situation, soil, temperature*, &c. &c. of those places in which nitre is found in a *native state*.

The liquid obtained from distilled animal substances, and which has hitherto been supposed to contain only carbonate of ammonia, and an oil, has been found by recent experiments made by Citizen BERTHOLLET, to contain also an acid, to which he has given the name of *zoonic acid*. This acid, which he has discovered in the liquid produced from the gluten of meal, from the yeast of beer, from bones and rags distilled for the preparation of the muriate of ammonia, he thinks himself authorized to consider as a product of the distillation of all animal substances. To obtain the zoonic acid pure, he employs the following process: he mixes water of the zoonate of lime, well assimilated in a tubulated retort with phosphoric acid, and then proceeds to distillation. The zoonic acid is somewhat volatilized; it requires a degree of heat nearly equal to that of boiling water to arrive at distillation; it will then be necessary to boil the liquor; if two receivers be used together, none will pass into the second. It appears that a part of the acid is destroyed by the action of heat; for the liquid upon boiling becomes brown, and at the close of the operation grows black. Hence Citizen Berthollet infers, that this acid contains carbone. He has not yet ascertained the other principles which become disengaged in the decomposition. The zoonic acid has a smell, not unlike that of meat when roasted brown; and in effect, it is produced on that occasion. Its taste is pungent (austere). It gives a strong red to paper dyed with the turnsole, and effervesces with all alkaline carbonates, &c.

Citizen BRUGNATELLI, author and editor of the "*Italian Annals of Chemistry,*" has lately declared his concurrence with the opinion expressed by Citizens FOURCROY and VAUQUELIN, relative to the experiments of Goettling, in Germany, on the pretended combustion of phosphorus in

azotic

azotic gas. Brugnatelli here expresses his assent to the evidence afforded by the experiments of the French chemists, and he accordingly retracts the denomination of *fossigene gas* (engendering light) which formerly he thought himself intitled to give to azotic gas, on the facts announced by the chemist of Jena;—the denomination of *thermoxigene gas* (engendering heat and acids) must consequently fall, at the same time, with that of fossigene.

Mr. Collier's Patent "*for a chemical process for freeing fish-oils from their impurities in smell, taste, and colour; and for improved strainers for oil, water, and other liquids, with instruments for ascertaining their qualities, and assisting their burning*," is of such extensive *practical importance* to health, domestic economy, and the arts, that justice requires this very ingenious and useful invention should be recorded in the annals of medical and physical science.—The excellent machines contrived by this philosophical artist, are extremely simple in their construction; and particularly his improved *strainers* or *filtering machines* for water and other fluids, possess the very important advantage, that they may be readily adapted to the purposes of families, work-houses, hospitals, public charities, the navy, or the merchant service, and also to the more particular uses of oilmen, of distillers, of the laboratory, the brewery, &c. A prominent feature in these inventions, is the manner of distilling, without heat; which if applicable to the purposes set forth in the specification of the patent, (See "*Monthly Magazine* for January") may form a new epoch in the history of chemistry. The design of this contrivance is, to free all fluids from their colour and putrescent qualities, almost without any expence of fuel. In a word, we are persuaded that the king's patent has never been more deservedly granted, than in the present instance: as the generality of patents, obtained for *medicinal purposes*, have too often reflected disgrace on the royal signature, by giving an authoritative sort of sanction to the fanciful productions of mercenary empirics, and ignorant dabblers in medicine. How long will these nuisances of society be permitted to carry on their hazardous experiments and nefarious practices?

An association has been formed in the city of New York, for *the investigation of the mineral and fossil bodies* which compose the fabric of the globe, and more especially for ascertaining the natural and chemical history of the minerals and fossils of the United States, under the name of *The American Mineralogical Society*.—Specimens of ores, metals, coals, spars, gypsums, crystals, petrifactions, stones, earths, slates, clays, chalks, lime-stones, marbles, and every fossil substance that chance or time may discover, or which may fall in the way of a traveller, and tend to illustrate the mineralogical history of America, will be examined and analyzed *free of charge*; sufficient pieces, with the owner's leave, being reserved to be placed in the society's collection.

The committee of the *American Mineralogical Society* have lately published an advertisement, the object of which is, to concentrate in one compendious view, all the information that now lies scattered through the different states of the Union, relative to the means America possesses of furnishing objects *immediately* requisite for *national defence*.

Dr. Benjamin De Witt, of Albany, whose account of the deleterious effects of *Stramonium* we have before noticed, intends speedily to publish a descriptive account of all the principal *mineral and medicinal waters* found in the state of New York. Few places abound with so many and

such

ſuch valuable mineral waters as the northern parts of this State; and as no general hiſtory has hitherto been given of their compoſition, or of the uſeful purpoſes they are calculated to ſerve, a work of this nature may be juſtly accounted *an American deſideratum.*

A *mineral ſpring* has been lately diſcovered in *Clinton* county, ſtate of *New York*, containing very large quantities of a ſaline ſubſtance, which, from ſome ſlight trials, is ſuppoſed to conſiſt chiefly of Epſom ſalts, or ſulphat of Magneſia.

The *American Philoſophical Society* have lately publiſhed a circular letter, in which, among other objects of inquiry, relative to the antiquities, cuſtoms, manners, languages, and character of the India nations, they invite their countrymen to inſtitute reſearches into the natural hiſtory of the earth, the changes which its ſurface has undergone as to mountains, lakes, rivers, meadows, &c.

Mr. Thomas Brufe, Sen. of Cheſtertown, Maryland, advertiſes patent inſtruments for *extracting teeth in a perpendicular direction.* His advertiſement is accompanied with certificates, in favour of his inſtruments, from Drs. Shippen, Wilkins, and Goodwin. From the well-known talents of theſe gentlemen, there is reaſon to expect much advantage from this invention, in the operation of tooth-drawing.

The ſtudent of *Mineralogy* will learn with ſatisfaction, that he may be ſupplied from Leipzig with cabinets, containing ſpecimens of minerals, arranged in ſyſtematic order, and at the following moderate prices.

A collection of 150 ſpecimens, each depoſited in a ſeparate paſteboard caſe, and numbered, correſponding to a catalogue, in which a deſcription is given of every piece, at 6 rix-dollars Saxon currency, or about £1. 1*s.* 0*d.* Britiſh:—a more extenſive collection conſiſting of 250 ſpecimens of ſuperior value, furniſhed with a ſimilar catalogue, and packed in drawers, in a red painted caſe, with lock, &c. for twenty rix-dollars S. C. or about £3. 6*s.* 8*d.* and laſtly, collections of the beſt ſpecimens, amounting to 500 in number, the produce of various countries of Europe, many of which are rare, and as yet non-deſcript, being recently collected, and provided with a complete and inſtructive catalogue, &c. &c. for 60 dollars, or about ten guineas.

Amateurs are requeſted to addreſs themſelves to Mr. Martini, bookſeller, in Leipzig.

According to the half-yearly *catalogue of lectures* delivered during the preſent ſeaſon in the *Univerſity of Jena*, we find forty ſeparate courſes announced on the different branches of medicine, beſides thoſe given on clinical caſes. Among this great diverſity of ſubjects we ſhall gratify the Engliſh reader by mentioning the following, which will doubtleſs appear rather extraordinary. On medical anthropology, Prof. Loder; on the opinions reſpecting the vital principle, Dr. Eckhard; on ſome principles of the Brunonian theory, Prof. Starck; on popular or domeſtic medicine, Dr. Bretschneider; on the art of writing preſcriptions, Nicholai and Gruner; on the advantages of diſputations and examinations, Fuchs, Bretschneider, and Bernstein.—We ſhall, upon this occaſion, only apply the remark of Seneca: *Confuſum eſt quidquid in pulverem ſectum eſt.*

At

At a late promotion of a candidate, Mr. Diruf, to the dignity of Doctor of Physic, in the German university at Heidelberg—a solemnity which the reigning Duke and Duchess of Deux-Ponts honoured with their presence, the privy-counsellor, Dr. Mai, delivered a Latin oration on the following curious subject: *Quænam ex paradoxa Brunonis doctrina in praxin medicam emolumenta?*" This singular question was not the only one here proposed, but the learned candidate gave a counterpart to it, by another oration, in which he answered a still more extraordinary query, viz. "*Quænam ex Brunonis doctrina fata pertimescenda?*"

The *Medical Lectures* in Columbia college, New York, commence annually on the second Monday of November, on the following branches:

Chemistry and Natural History;	by Prof.	Mitchell.
Anatomy and Surgery	——	Post.
Midwifery, and Infantile Diseases	——	Rodgers.
Theory and Practice of Physic	——	Hammersley.
Materia Medica and Botany	——	Hosack.

Regular *Clinical Lectures* are also given by Dr. Rodgers, in the New York hospital; which is furnished with a valuable collection of medical books.

At the meeting of the *College of Physicians of Philadelphia*, held July 3d, 1798, the following officers were elected, according to the usual forms: Dr. John Redman, *President*; William Skippen, Jun. *Vice-President*; Adam Kuhn, Samuel Duffield, Thomas Park, and Caspar Wistar, *Censors*; Benjamin Say, *Treasurer*; and Thomas C. James, *Secretary*.

The newly-established colleges in the *western hemisphere* have set a laudable example, in directing their medical students to write the *Inaugural Dissertations* for the degree of Doctor of Physic, in their native tongue, or more properly, in the language transplanted from Britain to America.—We are happy to observe, that this specimen of good sense has lately been introduced likewise in some of the *German* colleges. The first of these, which broke through the absurd custom of writing them in Latin, was the university of Kiel, in the principality of Holstein, subject to the king of Denmark.—Mr. William George Pfefferkorn, now Physician to the Infirmary at Altona, was the first graduate in Germany, on whom the titles of Doctor of Medicine and Surgery were thus conferred, after having written his dissertation "*On the disease of the Norwegians, called* Radesyge," published at Altona, (in German) 1797.

Among the numerous translations of English books into the German language, whether of a valuable or frivolous complexion, we shall at present point out the following, beginning with those which we consider to possess the most merit: "Dr. G. Fordyce's *Practice of Physic*;" from the sixth edition; by Dr. C. F. Michaelis: 270 pp. 8vo.—"Dr. R. Willan's *Description and Treatment of cutaneous Diseases*, Ord. I. 110. pp. quarto.—"Dr. J. Currie's *Medical Reports on the Effects of Water, cold and warm, as a Remedy in Fevers, &c.*"—"A. Thomson's *Inquiry into the Nature, Causes, and Cure of nervous Disorders*;" * translated from the

* The German Reviewers express an uncommon and uniform satisfaction at the excellent rules of diet contained in this small treatise; as, without due attention to such rules, it is no easy task to cure a hypochondriac. W.

the fourth English edition, and accompanied with remarks by Dr. G. F. Muhry, 83 pp. 8vo.—" Dr. W. Falconer's *Observations on the pulse, &c.*" with remarks and a supplement, by Dr. Kausch, 178 pp. 8vo.—" Dr. Bree's *Practical Inquiry on disordered Respiration, &c.*; with remarks, by K. F. A. S. (to whom Dr. Michaelis, of *Leipzig*, who first announced a translation of this work in the Jena Gazette, has consigned the task.)—" Dr. Crichton's *Inquiry into the Nature and Origin of mental Derangement, &c.* 2. vols. 8vo. Goettingen, 1798—" Dr. T. Trotter's *Medicina Nautica;* translated by Dr. C. Warner, and accompanied with a learned preface, by Professor Hufeland.—" T. Blizard's *Suggestions for the Improvement of Hospitals, &c.*"

The indefatigable Dr. Beddoes of Clifton, is preparing for the press the first volume of a periodical publication, intitled " *Contributions to Physical and Medical Knowledge: principally from the west of England and Wales;*" the profits of which (if any accrue) are to be devoted to the *Institution for investigating the medicinal powers of factitious airs.*—In our next number we hope to be enabled to give an account of the progress of this Institution; and for the last publication of Dr. Beddoes, which is a valuable " *Collection of Testimonies, respecting the treatment of the venereal disease by nitrous acid,*" we refer the reader to our *Retrospect of Medical Literature*, in the concluding part of this Journal.

Dr. Underwood's " *Treatise on the Diseases of Children, now first adapted exclusively to the use of Professional Readers,*" is in the press, in an advanced state, and nearly ready for publication. With the same work, the Doctor proposes to publish his " *Chirurgical Tracts.*

Mr. Charles Brown, of Ely-Place, Holborn, proposes to publish, as early as possible, a volume, intitled: *Annals of Pneumatic Medicine;*" for the completion of which he solicits the assistance of such gentlemen as are in possession of any facts, relative to the use and effects of factitious airs in diseases.

The third edition of Dr. Thornton's " *Medical Extracts,*" with a number of additional plates and many considerable improvements, is now in the press, and will speedily be published.

The second edition of I. Townsend's " *Physician's Vade Mecum,*" or an abridged translation of Dr. Cullen's System of Nosology, &c. a very useful manual to the medical student, will appear in a few weeks.

The learned Greek, Coray, has now ready for the press an elegant version, in German, of the celebrated work of *Hippocrates, on air, water, and climates.* This translation is highly recommended by Professor Sprengel, and will appear at Leipzig in the course of next summer. Of this inestimable work we have authority to announce a speedy translation into English, by Dr. W. Wright.

A work of considerable interest and importance to the medical world is now in the press at Gotha, intitled: *The History of Inventions, Theories, and Systems, which have prevailed in Physics and Medicine during the Eighteenth Century.* This historical retrospect is intended to supply the readers of the

reputed *Journal of Inventions, &c.* with all the facts and disquisitions contained in the first twenty-four numbers of that *excellent* periodical publication, now out of print. As we have a copy of this Journal in our possession, we can assert, with a degree of confidence, that its leading principles are founded in rigid impartiality and justice, though occasionally we find some parts tainted with a small portion of egotism. The very learned but acrimonious Professor HECKER, is the supposed Editor of this historical Journal, in which the modern theories of *oxygenating the system—of the chemical action of the gases on, or within, the human body*, &c. &c. are particularly and very keenly contested.

An abridgment, in two volumes octavo, of that complete and valuable work, *The Physical Dictionary*, by the late Doctor and Professor GEHLER, (in six volumes octavo, with a great number of plates) is now in the press at Leipzig: it is principally calculated for the use of such students of Natural Philosophy, as may not find it convenient to purchase the larger and more expensive work.

Mr. ACCUM, an ingenious foreigner, resident in London, purposes to publish (by subscription) a work intitled, *Chemico-Physical Aphorisms, comprehending a general View of the Discoveries, Experiments, Observations, Phenomena, and Facts illustrated in experimental Chemistry; with a summary Description of the Use and Management of the principal Apparatus employed by the Moderns in Natural Philosophy.*

A faithful translation of a late work of considerable merit, and containing much novel matter, has just come from the press, but too late to give a particular account of it, in our "*Retrospect of Medical and Physical Literature.*"—It is intitled: "*Travels in England, Scotland, and the Hebrides, undertaken for the purpose of examining the State of the Arts, the Sciences, Natural History, and Manners of Great Britain: containing mineralogical Descriptions of the Country round Newcastle, of the Mountains of Derbyshire, &c. &c.*" Translated from the French of B. FAUJAS SAINT-FOND, member of the National Institute, and professor of geology in the museum of Natural History at Paris. *London.* Ridgway.

A new and enlarged edition of Dr. J. C. SMYTH's work on the jail-distemper, and particularly on the extirpation of contagion, by means of fumigating (with nitrous gas) rooms and places filled with pestilential vapours, is nearly ready for publication, and will appear in the present month.

Dr. E. G. CLARKE's small work, intitled "*Medicinæ Praxeos Compendium*," which has been announced some time ago, will certainly appear early in this month.

Mr. A. CARLISLE, we understand, will not be able to deliver his usual course of lectures on the general science of anatomy in the present season; on account of other engagements.

*** The

*** The following interesting communication is deemed worthy of a place in our first number. It unfortunately did not reach us till the part of the Journal appropriated to such Original Communications had been printed off.*

An Account of the Means successfully employed in preserving the Health of the Seamen, on board his Majesty's Ship Astrea, on the Jamaica Station, in the Years 1787, 1788, 1789, *and Part of* 1790:—*By* STEWART HENDERSON, *formerly a Surgeon in the Royal Navy, now of the Army Hospital-Staff.*

WHEN we look into the political and medical history of this war, we are at a loss to say, which of the two great enemies of mankind, French principles, or the pestilential disease, has been most destructive. While it becomes the province of the statesman to enact salutary laws, to prevent the baneful influence of principles subversive of all social order, it is no less the duty of the guardians and superintendants of health, to recommend and employ such precautions and means, as prudence and experience have suggested, to prevent the introduction, and check the progress of a formidable enemy—pestilential disease; which commits such ravages on the human race, and seems even yet to bid defiance to the medical art.

The prevention of disease often depends on circumstances, which to some appear trifling, and, therefore, are but little attended to: they are, however, found by experience to be of eminent utility and importance. This, I trust, will be shewn, in the following faithful account of the Astrea; being an extract from my Medical Register, with practical remarks on the diseases; which I intended to have offered to the public, on my arrival from the West Indies, in April 1790, had leisure permitted.

Previous to giving an account of the means employed on board the Astrea, I think it proper first to observe, that the great and celebrated circumnavigator, Capt. COOKE, proved to the world the possibility of carrying a ship's crew through a variety of climates, for the space of near four years, without losing one man by disease; a circumstance which added more to his fame, and is supposed to have given a more useful lesson to maritime nations, than all the discoveries he ever made. He has shewn, that health may be preserved, on the most distant expeditions, undertaken either for the purposes of war or commerce, and by means no less simple than efficacious. It is true, he possessed advantages, which few ships of war, on any service, can expect to have; a large roomy ship, to contain a small number of chosen men, all volunteers, provided with every necessary,

neceſſary, and cloathing adapted to different climates. Articles of diet, and preventives, which other ſhips are not ſupplied with, and the proviſions of a ſuperior quality to what is generally allowed; above all, the ſhip almoſt conſtantly at ſea, and not obliged to put into unhealthy harbours.

Other judicious and ſkilful commanders, who have ſince adopted the means he purſued, have met with equal ſucceſs, though under leſs favourable circumſtances; this, however, does not diminiſh the juſt praiſe of that illuſtrious navigator, who well merited the honorary medal beſtowed upon him by the Royal Society, and preſented by the preſident, Sir John Pringle.

His Majeſty's ſhip Aſtrea, of 32 guns, and 200 men (peace complement), commanded by Capt. Peter Rainier (now Vice-admiral, commander in chief of his Majeſty's ſhips in India), was fitted out at Woolwich, in October 1786, and ſailed for Jamaica the 6th of January, 1787. I did not join her until a few days before ſhe ſailed, ſo that I had it not in my power to ſelect the medicines moſt uſeful for the climate. My predeceſſor had previouſly ordered the medicine cheſt from the Apothecaries' Company, perhaps without knowing her intended ſtation. I found, however, that the men were judiciouſly ſelected, many of them having lately returned from the Weſt Indies. Upon inſpecting the whole of the crew, I had occaſion to requeſt ten men might be ſent to Haſlar Hoſpital, as being unfit ſubjects for a hot climate, and, indeed, for the ſervice; being affected chiefly with ruptures and old ulcers.

We were not allowed any preventive articles of diet; no ſour-crout, eſſence of ſpruce, or malt, orange or lemon juice, potatoes, ſugar, or wine for the ſick; which neceſſary articles have been ſince liberally ſupplied to his Majeſty's ſhips, in conſequence of the able repreſentations of Dr. Trotter, phyſician to the fleet, and other medical gentlemen in the navy; there is now, likewiſe, a better allowance of vegetables when in port; which, as appears from the medical hiſtory of the fleet, has had a very ſalutary effect.

As we could not call in theſe auxiliaries, it behoved us to redouble our exertions, and to beſtow the greateſt attention on thoſe in our power, and which we knew from experience to be moſt uſeful. I judged that the health of the men, and exemption from the diſeaſes of the climate, would, in a great degree, depend on cleanlineſs, ventilation, keeping the deck below free from moiſture, cold-bathing, preventing irregularities, and expoſure to marſh-effluvia; conſtant employment for the body and mind; but yet to avoid working in the ſun before the ſea-breeze ſet in; and to provide, when the ſervice would admit, the liberal uſe of vegetables and other antiſeptics.

Such

Such were the means I proposed for the prevention of disease: and from Captain Rainier's character, as a humane and experienced officer, and his long acquaintance with hot climates, I had every reason to expect, that whatever would tend to a salutary effect, would meet with his approbation and support.

I soon found that he well understood that important part of an officer's duty; and it is from his judicious orders, regulations, and attention on the part of the officers, in seeing them well executed, the means employed for preserving and restoring health were so succesful, that not one of the ship's company died on board, and only four were at the hospital from disease, during the three years the ship remained on the Jamaica station: a great part of that period we lay in a very unhealthy harbour (Kingston): a singular circumstance, contrasted with what has since happened in that part of the world.

On the passage, we stopped fourteen days at Ferrol and Corunna, where we were supplied with fresh beef and vegetables; and likewise at Madeira, where we remained a week. The men, as usual, were put into divisions or squads, under certain officers, who inspected their cloathing, to see that they kept themselves clean and orderly, particularly on Sundays, when they were mustered by the commanding officer. During the whole time of our lying on the station, cold bathing was almost daily used. When in harbour, a sail was put over-board, sunk to a certain depth, and suspended from the yard-arm, to prevent danger from the sharks, or any other accident to such as might not have learnt to swim. When the lower deck was washed, fires were kept in Brodie's stoves, until it was completely dried, and well fumigated by the usual mode, as well as in rainy weather, or when there was much moisture in the atmosphere. A fire was likewise put into the well, after being swabbed dry, which was more effectual in destroying the noxious air, than the custom of letting in water by the pumps. To prevent those irregularities on shore, which too often disgrace the character of British seamen and soldiers, and expose them to the exciting causes of disease, Captain Rainier very prudently refused any leave of that kind to men he could not depend upon. Indeed, after a few months abstinence, they did not seem solicitous to obtain it; knowing, they had no money to purchase their favourite, but baneful liquor, or power to sell their necessaries, with impunity. I believe the Astrea was the only ship in the navy, which had no occasion for what is called a liberty-book, while the crew seemed perfectly satisfied and contented without that permission; a proof, I think, of their being under excellent discipline. It is true, they were allowed on Sundays, when in port, to visit their acquaintance in the different ships in the squadron, and on those occasions a most complete scene of drunkenness was usually exhibited; scarcely a man but was obliged to be hoisted on board, and in a situation that required no little

management

management to prevent fatal consequences. On those days I thought it necessary to be on board, and to give directions that they should be placed properly in their hammocks. This necessary indulgence, however, was sometimes productive of sickness, but not of that tendency which would have happened, had the same inebriety been committed on shore; and we considered, that constant confinement might have had a worse effect, than the irregularities they were guilty of. When not employed on duty, amusements and diversions were promoted and encouraged by the officers. Neither was there any restriction to women coming on board; which did away one principal motive for their wishing to go on shore.

To guard as much as possible against the bad effect of marsh effluvia, the ship was always anchored as far from the shore, as could in safety be admitted; and in the different islands we visited, St. Domingo, Porto-Rico, Curassoa, Cuba, &c. care was taken to procure fresh beef, and plenty of fish, by hauling the *seine*. This last was never neglected, and it proved to be a very nutritious and proper food in those countries. They were likewise supplied with vegetables, oranges, and limes, which grow in many parts spontaneously; these were procured in abundance, and when it became absolutely necessary to employ the ship's company in wooding, (which should never be done, if possible, in hot climates) the parties were injoined to be on board before dark, by which they escaped the bad effects of the night air. This service has frequently occasioned the loss of many seamen. The watering duty, another service very destructive to the health of seamen, was performed by blacks, who manned the long-boat, and whose constitutions were congenial to the climate.

These were the principal means we employed for preserving the health of our men; the consequence was, as I have already related, that not one of the crew died on board; a fact, which may be seen by the ship's books in the Navy-office; though sickness will always prevail more or less, on board of ships, from causes which no human exertions can prevent. I am persuaded also, that in time of war, from the nature of the service carrying on, the regulations before stated, and the observance of them, cannot be so strictly adhered to; yet I am convinced, from what I observed during nearly the five years I was employed in the West Indies last war, that a great deal of sickness might have been prevented, and many valuable lives preserved, had such salutary means been better understood, and attended to.

This, in my opinion, points out the necessity of a code of salutary regulations being established, for the guidance of commanding officers of his majesty's ships, who may not have had an opportunity of becoming acquainted with the means of prevention, and are liable to err, from a mistaken idea of the causes of disease. Should any general sickness prevail, an enquiry might be instituted, to learn whether it proceeded from neglect or unavoidable causes.

GENERAL

General State of the Weather.

As the weather is justly supposed to have a considerable effect in producing disease, I think it necessary to give some account of it, during the period of three years we remained on the Jamaica station.

I have already observed, that the Astrea sailed from England for Jamaica in the beginning of the year 1787. Except three or four slight venereal cases, we had no sick on board, having sent to the Hospital those whom we deemed improper subjects for the service. In the channel we experienced a great deal of cold, boisterous weather, before we reached Corunna; during which time four men were seized with pulmonary complaints, and one with acute rheumatism. After leaving the coast of Spain, we arrived at that delightful and salubrious island, Madeira. As we approached the warm latitudes, a few, chiefly marines, who had never been in a hot climate before, complained of head-ach, and febrile symptoms, which were removed by bleeding, and other evacuations. In March and April we were on our station at Port Royal. In May and June, when the periodical rain set in, we were on a cruize, in consequence of which we did not suffer from the rains or heat of those two months, and benefited by the refreshing breezes met with at sea; and it has been frequently remarked, that the mariners enjoy a greater degree of health, when at sea in the West Indies, than in port at any other part of the world. Commanding officers would therefore act judiciously, in keeping ships as little as possible in harbour on that station. Commodore Gardner, then commanding his Majesty's ships in that quarter of the globe, was in the habit of keeping the squadron much at sea, which had a very salutary effect on the crew. During the whole of August, September, and October, which are, what are called, the hurricane months, we went up the harbour, and anchored pretty high, towards Rock-Fort, to avoid the danger of those furious winds, which are sometimes attended with dreadful destruction, both at sea and on shore; this was experienced when I was at Jamaica, in October 1780; during these months deluges of rain fell, which obliged us to keep the awnings almost constantly spread and sloping; the sea-breezes were interrupted, and the atmosphere in general became excessively close, sultry, and loaded with moisture, attended with thunder and lightening.

During this time, a languor and dejection of spirits were felt by all on board. As the weather prevented any duty from being performed, and conscious of a predisposition to disease, we judged it adviseable, to promote every kind of sport and diversion. Dancing, that favourite amusement with seamen, was cheerfully encouraged, as we fortunately had a fidler on board; a more useful man in a ship than a trumpeter, who

who I believe is generally allowed to his Majesty's ships, but for what purpose I have yet to learn.

In the beginning of November we sailed to Fort-Royal, without having a sick man on board, or one left behind at the Hospital; the three men sent thither in September had returned to the ship. Such an extraordinary and uncommon state of health, I cannot impute to any other circumstance, but the salutary regulations above-mentioned, which had been strictly enforced: and above all, that the men were not allowed to go on shore, and thereby less exposed to the exciting causes of disease.

While the ship lay anchored from the main land, as far as safety would permit, we enjoyed the benefit of the sea-breeze, when it did not reach ships who were nearer the shore; for near these ships it frequently blows but faintly, and partially. In November and December, the weather becomes more settled; a fresh North wind blows in the day, from the continent of America, and in the night a strong land-wind, carrying with it a considerable quantity of marsh-effluvia; at this time the greatest sickness generally prevails in the town of Kingston. As the ships at Fort-Royal are not entirely out of the reach of its influence, the best way to avoid it is, to put to sea; the cold North winds un-impregnated with that noxious exhalation, will preserve health, and speedily recover convalescents; as we experienced in several cases of remittent fever. The state of the weather during the other two years, varied but little, except in the hurricane months of 1789; we had not the usual rains and squalls, which distinguish that season: the sea breezes became more interrupted, and changeable; for the most part, indeed, a calm prevailed, and the heat was extreme: Fahrenheit's thermometer, during the whole of September, was not under 90° in the shade; but in the beginning of October, a very considerable and sudden change took place in the temperature of the air, which was followed by an epidemic catarrh in the squadron, and very prevalent among the troops and inhabitants on shore: very few escaped it; and as comparatively few persons were attacked this year with the endemic remittent fever, it was supposed by many, that the qualities of the air had undergone some change, which had produced this influenza, and prevented the prevalence of the fever. In my opinion, however, our exemption was owing to the want of the usual quantity of rain, one of the necessary agents in producing marsh-miasmata; Fahrenheit's thermometer, during the whole of our lying on the station, seldom exceeded 82 or 83 on board, when not exposed to the rays of the sun.

No. 7, Lancaster-Court, Strand,
Feb. 20, 1799.

S. HENDERSON.

CRITICAL RETROSPECT

OF

MEDICAL AND PHYSICAL LITERATURE.

FOR FEBRUARY, 1799.

*** *This Department of our Journal will be continued regularly every Month. In the present Number, we are obliged, for want of room, to confine ourselves to the Review of the latest and most valuable foreign and domestic Publications.*

NATURAL HISTORY AND BOTANY.

Flora Atlantica, ſive hiſtoria plantarum, quæ in atlante, agro Tunetano et Algerienſi creſcunt ; auctore R. DESFONTAINES. Number firſt. Folio. *Paris.*

The firſt number of this ſplendid work contains the three claſſes of the Linnæan Syſtem, viz. the *Monandria, Diandria,* and *Triandria,* repreſented on thirty elegant engravings, and accompanied by the Latin text, or explanations, printed on fifteen ſeparate leaves, in a very ſuperior ſtyle.—We cannot withhold our praiſe and admiration from a work of ſuch magnitude, carried on in a country, and under circumſtances, the moſt unfavourable to expenſive and coſtly undertakings.

Tableau élémentaire, &c. " *Elementary Picture of the Natural Hiſtory of Animals :*" by G. CUVIER, of the National Inſtitute of France, &c. 8vo. XVI. and 710 pp. with indexes, and fourteen copper plates (8 liv.) *Paris.* Baudouin.

This valuable work is deſigned immediately for the uſe of the pupils ſtudying Natural Hiſtory in the central ſchools. It contains, however, ſuch a number of *new* obſervations on the prevailing ſyſtems of this ſcience, and ſo many conſiderable changes, that it is juſtly intitled to the attention of every naturaliſt.

Auſwahl ſchöner Gewächſe, &c. " *A Choice Collection of rare and beautiful plants : being a continuation of the American plants :*" Number III. from Table 201 to 250; fifty coloured plates, and one ſheet text; 8vo. (4 rix-dollars.) *Nürnberg.* Raſpe.

The engravings, as well as the colouring, is more correct and chaſte in this, than in the earlier numbers. Moſt of the plates are faithful copies from the works of our celebrated *Curtis,* and the no leſs famous botaniſt, Profeſſor *Jacquin,* of Vienna. From the magnificent collection of plants, by the latter, we find in this number ſeveral pieces of ſorrel (*Rumex acetoſa, Lin.*) repreſented with truth and elegance.

Nouvelle Mécanique &c. A New Analyſis of the Mechaniſm of Motion in Men and Animals ; by J. P. BARTHEZ, 8vo. *Paris.* Carcaſonne.

The author divides this treatiſe into ſix principal ſections, explaining ſucceſſively the mechaniſm of the different claſſes of animals ; the progreſſive motions of man and quadrupeds, as well as of the animals that creep, ſwim, and fly.

In an introductory diſcourſe, written with dignity and perſpicuity, M. BARTHEZ ſtates his ideas reſpecting the nature of the vital principle, and the *firſt cauſe* of the phenomena he endeavours to explain.

CHEMISTRY AND NATURAL PHILOSOPHY.

Demonſtration de la Fauſettée, &c. "*A Demonſtration of the Falſity of the Principles adopted by the Modern Chemiſts; being a Supplement to the Treatiſe on the Diſſolution of Metals;*" by Citizen MONNET. 8vo. 400 pp. (4 liv. 10 ſols.) *Paris,* Janſen.

THE author begins with combating the opinion of Scheele, reſpecting the *ſpathic acid,* which he calls the *vitreous acid of Spath.* He next adverts to the *ſuppoſed ſaccharine acid,* which, in his opinion, is no more the acid of ſugar, than the vitriolic acid diſtilled upon ſpath is the acid of that ſubſtance; an opinion in which he is ſupported by the authority of MACQUER and WIEGLEB.—The acid of tartar, according to citizen Macquer, is compoſed of marine acid, oil, earth, and fixed alcali.—In examining the properties of galls, and the *gallic acid,* he attempts to refute MORVEAU's aſſertion, that the colouring principle (aſtringent matter) contained in galls, affords this particular acid.

Although the author does not fail to illuſtrate his ſingular aſſertions by numerous experiments, inſtituted by himſelf, on the chemical properties of the ſubſtances he has analyzed, yet we are perſuaded that his illuſtrations would have ſuffered no derogation from the merit they poſſeſs, had he treated his reſpectable opponents with more liberality and politeneſs; for we frequently meet with ſuch expreſſions in his polemical treatiſe, as are equally unworthy of a philoſopher and a man of ſcience.

Grundriſs der Naturlehre, &c. *Elements of Natural Philoſophy*; being a Text-book for the Uſe of Chemiſtry in the Royal Medico-Chirurgical College of Berlin. With two plates. 8vo. 326 pp. *Berlin.* Hartmann. 1798.

THE preſent ſummary was compiled, in conſequence of an intimation given to the author by the committee of the Pruſſian government appointed to ſuperintend and regulate the affairs of literary inſtitutions; as there was evidently no elementary treatiſe in the German language, in which the outlines of phyſical ſcience were properly connected with the fundamental principles of modern chemiſtry. This intention the author has accurately and completely fulfilled; and, although he is conſiderably indebted to the labours of his predeceſſors, who have furniſhed him with his principal materials in general phyſics, as well as in chemiſtry, particularly to *Klügel* and *Gren,* he is, nevertheleſs, entitled to well-earned commendation for having judiciouſly digeſted a compendious and valuable ſchool-book.

An Inaugural Diſſertation, ſhewing in what Manner peſtilential Vapours acquire their acid Quality, and how this is neutralized and deſtroyed by Alkalies, &c. &c." By A. C. LENT, Citizen of the State of New-York. 8vo. 54 pp. *New-York.* Swords. (May 1798.)

THIS perſpicuous and well-written eſſay poſſeſſes a juſt claim to honourable mention here; and the more ſo, becauſe the doctrines advanced in it, are profeſſedly drawn from the Lectures of the preſent Profeſſor of Chemiſtry, in Columbia-College, Dr. MITCHILL, the American Fourcroy.

We have not room to inſert a ſynoptical view of this new doctrine, which, in a great meaſure, correſponds with Dr. Trotter's opinion relative

to

to the extirpation of peſtilential vapours, and of which he has announced his intention to give an abſtract in the ſecond volume of his '*Medicina Nautica**.'

A Sketch of the Revolutions in Chemiſtry. By T. P. Smith. 8vo. 40 pp. *Philadelphia.* Smith. 1798.

This 'Sketch' compriſes the ſubſtance of an annual oration delivered before the Chemical Society of Philadelphia, relative to the progreſs of chemiſtry in different countries, within the preceding year. Mr. Smith has materially deviated from the plan preſcribed by the ſociety; for, in lieu of confining himſelf to the chemical hiſtory of the year, he preſents a general view of the revolutions, which this branch of knowledge has undergone in different ages and countries.—Although we differ from the author in ſome of the poſitions advanced by him; for inſtance, that the ancient allegories which appear to have a *phyſical* relation, "muſt be paſſed over as the unmeaning offspring of ignorance and ſuperſtition," we muſt ingenuouſly allow that this oration is not without a conſiderable ſhare of merit; as it contains an intereſting, though incomplete, hiſtorical account of a ſcience, in which a new æra is opened to the philoſophic inquirer.—We ſhall conclude this article by expreſſing our ſatisfaction on learning, that the ſcience of chemiſtry begins to be ſtudied with taſte and avidity by the females of the tranſatlantic continent.

MATERIA MEDICA AND PHARMACY.

A Praktiſche Arzneymittellehre, &c. Practical Syſtem of Materia Medica. By Justus Arnemann, M. D. and Profeſſor in the Univerſity of Gottingen. Third edit. enlarged and improved, 8vo. 590 pp. *Gottingen,* Vandenhoek, &c.

Although the author has made but few additional improvements in the ſecond edition of this work, which appeared in 1795, he has arranged the whole of its materials in a more conſpicuous manner, particularly the therapeutical properties of *mineral waters,* and the officinal *factitious airs;* each of theſe forming here diſtinct claſſes of medicinal remedies. He has further ſubjoined a new claſs of the *cooling* remedies, among which *nitre* occupies the firſt place. Beſides theſe additions, the learned Profeſſor has enriched the Materia Medica with a number of new and uſeful improvements, not included in the former edition, and of which we ſhall here only notice the *carex arenaria,* and the *calx antimonii ſulphurata,* which are very properly intitled to a place in that excellent work. The preſent volume contains what are ſtrictly called *medicinal* ſubſtances; and as the *chirurgical* remedies, according to the preface, are intended to compoſe a *ſecond* volume, ſimilar to that of the ſecond edition, this circumſtance, however, ſhould have been expreſſed ſo in the title page.

Collections for an Eſſay towards a Materia Medica of the United States, &c. by B. S. Barton, *M. D.* &c. 8vo. 49 pp. *Philadelphia.* Way and Groff. 1798.

The author of this ingenious Eſſay is, unqueſtionably, the firſt American, who has attempted to furniſh his countrymen with a *Materia Alimentaria*

* Vid. under the head of *Medical and Phyſical Intelligence;* p. 80 of this number.

Alimentaria and *Materia Medica* of their native soil. On the former, we find but few particulars, although on the latter there is an account of several indigenous plants of America, which promise to be useful in the practice of physic. He pursues his inquiries beyond the labours of the Bartrams, of Colden, Calm, and Schoepf; and appears emulous to reveal the hidden treasures of the vegetable world. Too long have the natives of the transatlantic continent been indebted to foreigners for genuine and satisfactory information, relative to the plants of their own country; and, even at the present day, the *German* student may obtain a more accurate knowledge of the trees and shrubs of North America, from the untranslated works of Wangenheim, Du Roi, Hedwig, Bridel, Jaquin, &c. than they can find in any publication which has appeared in the *English* language.—We cannot transcribe, at present, the different *new* vegetables which the industrious professor has indicated in his Materia Medica, but we shall endeavour to communicate them in some future number of our Journal.

Dr. Barton has promised, at the conclusion of this Essay, to publish "*Some Strictures on the Classification of Dr. Darwin*," which we shall take the earliest opportunity of laying before our botanical readers.

MEDICINE AND SURGERY.

A Collection of Testimonies respecting the Treatment of the Venereal Disease by Nitrous Acid; published by Thomas Beddoes, *M. D.* 8vo. XVII. and 277 pp. *London.* Johnson. 1799.

This collection is the result of Dr. Beddoes's indefatigable exertions in the cause of scientific truth and medical improvement, particularly as it stands connected with the important subject of the nitrous acid, as a remedy in lues. It exhibits in one view the collective mass of evidence for, and against, the use of this powerful agent, in that disorder. The unquestionable facts here adduced, afford an extensive and very interesting view of the nitrous acid, and analogous antisyphilitics, as hitherto observed and detailed by a considerable number of medical gentlemen, no less eminent for their abilities and experience, than respectable for the stations they occupy in society. Among these, it will be sufficient to mention the respective names of Drs. Trotter, Rollo, Geach, Swediauer, Currie, Carmichael, Carrick, &c.

The testimonies thus collected and exhibited, appear, on the whole, to be considerably in favour of the new medicine; although impartiality obliges us to observe, that there exists some disagreement in the evidence, respecting the sensible changes in the patients, on whom these remedies were tried with success. Such discordance, however, is not a novel phenomenon in the practice of medicine; and, considering the precipitate manner in which new remedies are *generally* administered; the want of proper attention to the peculiar habits, constitutions, and predisposing causes, and other concomitant circumstances of the patient—imperfections not seldom observable among a certain class of practitioners, (such, especially, as have too many inveterate cases under their care *at one time*); we have reason, considering these circumstances, to be highly satisfied with the reports of the *inefficacy of the acid*, as indicated by certain superficial writers.

Indeed, the account given by Dr. Currie is so satisfactory and conclusive, that a few extracts from the masterly and judicious letter * of that excellent physician will, we should imagine, be deemed sufficient to confirm the favourable

* See page 129—136 of Dr. Beddoes's '*Collection*.'

favourable opinion almost generally entertained on this valuable accession to the stock of the *Materia Medica.*—We have no intention, however, to take any particular notice here of the singular controversy now subsisting on that subject.—

"The encouragement arising from the three cases * just mentioned, led me to try the nitric acid in a variety of other cases. In some of these, my success has apparently been complete; in others, there has been evident benefit, without a perfect cure; and in others, it has seemed to fail entirely. It is not a little curious, that in some of the cases in which I have succeeded, the symptoms were what are called *secondary*, and the disease *in its most rooted and obstinate state.*"

The uncommon success with which the use of this acid was attended in another patient of Dr. Currie's, named *Elkins*, claims further and particular notice.—"We prescribed (says the Doctor) the nitrous acid, and his sufferings abated from the third day; and being continued, the thickening of the pericranium and the node of the tibia entirely disappeared, with all his other symptoms. He took the nitrous acid, in all, to the quantity of eight ounces, in eight gallons of water, which he drank in sixty days.

"Elkins has been nearly a year discharged, and has never had any return of his complaints. This case has made some noise, and I have endeavoured to attract the attention of several of my brethren to it, as decisive of the influence of the acid in this destructive disease.

"In the quantities in which I have prescribed the nitric acid, it has been *uniformly* salutary to the constitution; in this respect, its action contrasting very happily with that of mercury.

"I have experienced the effects of nitric acid in complaints of the stomach, hypochondriasis, asthma, and some other diseases, as well as in the hepatitis."

The second division of Dr. Beddoes's Collection, contains *Observations on the cases published by* Mr. BLAIR, in a pamphlet, intitled, "*Essays on the Venereal Disease, and its concomitant Affections, illustrated by a Variety of Cases. Essay I. Part I.* &c."—In this section we find some severe strictures, 1 on the "twenty-three experiments with the acid of nitre, the citric acid, and the oxygenated muriate of potash, in primary symptoms;" 2. "on twenty-six cases of confirmed syphilis, wherein the acid of nitre was exhibited;" and, 3. on "eleven trials with the oxygenated muriate of potash, in advanced stages of the lues venerea." In all of these, the author's decided opposition to the new remedies, and his invincible predilection for *vetus amicus* mercury is so very conspicuous, that his conduct, *on these occasions*, requires no further comment or notice from us.

In the third and last division of this work, Dr. Beddoes furnishes us with his own "*Remarks on various Questions that have arisen during the Investigation of the antisyphilitic Virtues of the Nitrous Acid.*" These remarks are prefaced with extracts from the BRITISH CRITIC, and the MEDICAL REVIEW, relative to the above mentioned '*Essay*' of Mr. Blair's, and of which we shall only say, they are *in one strain, and perfectly in character!* As we have already declined entering into the merits of the controversy, relative to the real or pretended effects of the nitric acid, we shall only add here, *en passant*, that in the testimonies adduced by Dr. Beddoes, there is such a mass of evidence in favour of this substance, as an excellent substitute for mercury, in almost every stage of lues (if the constitution of the patient, and other collateral circumstances be

* *Vide* page 130—132 of the same '*Collection*,' where three remarkable cases of lues are related; in the two first of which it appears, that the nitrous acid performed the cure '*without the use of mercury.*'

be properly attended to) that Dr. Beddoes, as ſtanding on higher ground, may triumphantly and ſucceſsfully direct the ſhafts of criticiſm, and pointed ſatire, againſt his feeble antagoniſt. He concludes this reſpectable 'Collection' with eleven additional documents, in an Appendix, which, in our opinion, are ſufficient to remove every remaining doubt, with reſpect to the unfounded ſuſpicions, and illiberal aſperſions thrown on the ſubject of the preſent inquiry, by his invidious opponents.

Caſes of the Diabetes Mellitus; with the Reſults of the Trials of certain Acids and other Subſtances in the Cure of the Lues Venerea: By John Rollo, *M. D.* Surgeon-General, Royal Artillery. Second Edition, with large Additions. *London.* Dilly.

To diffuſe the knowledge of the new method of treating the diabetes, and to place this publication within the reach of a greater number of readers, the learned author has been induced to compreſs the preſent edition into one volume. In the preface, we meet with two intereſting letters from Chisholm; from the ſecond of which we ſhall extract the following paſſage: "The *nitrous acid* is a moſt ſafe and efficacious remedy in hepatic complaints of old ſtanding, in all *venereal obſtructions*, and diſeaſes depending upon them.

This valuable work is divided into two parts: the firſt contains "*Caſes of the Diabetes Mellitus, with a general view of the nature of the diſeaſe and its appropriate treatment: including a conciſe review of what has been written on the ſubject; an anſwer to ſome objections urged againſt the doctrine we have delivered; and chemical experiments on urine and ſugar.*" p. 17—477.

In this extenſive range of inveſtigation, we find much curious and intereſting matter, particularly in the very judicious and accurate chemical experiments, inſtituted to illuſtrate this ſubject; and Dr. Rollo concludes this part with the following reſult: "1. That ſugar conſiſts of carbone, hydrogene, and oxygene; and may be conſidered as *a pure* vegetable oxyde; 2d. That ſugar of milk is compoſed of the ſame principle, but contains more oxygene, and conſiderably leſs charcoal; 3. That gum differs from ſugar, in containing, beſides carbone, hydrogene and oxygene, both lime and azote; 4th. That vegetable farina cannot be converted into ſaccharine matter, without the joint action of oxygene and water, the firſt of which appears to be abſorbed, and the laſt decompoſed during this proceſs; 5th. That when ſugar is deprived of its oxygene, or combined with other ſubſtances, it loſes its characteriſtic properties, and is no longer ſuſceptible of the vinous fermentation; 6th. That neither vegetable nor animal mucilages, in their pure ſtate, are ſuſceptible of this proceſs.

"From a review of the whole, the propriety of the different medicines which have been employed in diabetes, muſt be obvious, more particularly the pure alkalies, lime-water, and the different ſulphurates, all of which muſt counteract the formation of ſaccharine matter in the ſtomach.—We alſo readily ſee the neceſſity of a diet, conſiſting entirely of animal food, being the only one which does not furniſh oxygene, and that peculiar but ſimple combination of carbone and hydrogene, conſtituting the baſis of ſugar, and without which it cannot be produced."

The *ſecond Part* of this truly practical work, preſents us with "*The Reſults on the trials of various acids, and ſome other ſubſtances in the treatment of the lues venerea:* by William Cruickshank, and other Surgeons of the Artillery." p. 481—625.—To this part the author has ſubjoined a *new* chapter, in which he gives a correct and circumſtantial

ftantial narrative of the trials made by Dr. WITTMAN; a table containing a lift of the patients afflicted with the venereal difeafe, " who have been treated in the Royal Artillery Hofpital at Woolwich, by the new remedies;" and fome additional remarks on the effects of the nitrous acid, the oxygenated muriate of pot-afh, &c. in the lues venerea, by Mr. CRUICKSHANK.—From thefe laft, we fhall felect the following pertinent and conclufive paffages:

" Eighteen months have now elapfed fince the firft cafes treated by thefe remedies have been cured; and of the firft feventeen, which were more immediately under our own management, *not one has relapfed, nor have the fecondary fymptoms made their appearance in a fingle inftance.* That the difeafe has been completely eradicated, can therefore admit of no doubt.—In our firft trials, we confined ourfelves, in a great meafure, to primary affections; but for fome time paft no diftinction has been made, and the fecondary as well as the primary fymptoms have been all treated on the fame plan.

" The total number which have now been cured in the Hofpital, fince the beginning of March, 1797, amounts to 155, as will appear from the table; of thefe, 13 had the fecondary fymptoms of the difeafe. This fmall number of fecondary cafes proves, in a great meafure, the certainty and efficacy of this mode of treatment; for, as Dr. Wittman employed thefe remedies in all venereal affections, whatever their nature might be, had the cures not been perfect, the fecondary difeafe muft have been very common; befides, of the 13, three only could be afcribed to this cafe, and thefe were all afterwards cured by the oxygenated muriate of pot-afh. Of the remaining ten, 4 appeared to be the natural confequence and progrefs of the difeafe, and fix followed a courfe of mercury."—P. 619, 620.

" Of the different remedies employed, we formerly gave the preference to the oxygenated muriate of pot-afh, * and we are now more convinced of its fuperiority; for there have been many cafes where it has fucceeded much better than the nitrous acid." P. 624.

" We do not prefume to account for the numerous *failures* which have been recorded, but fufpect that they are to be afcribed either *to fome irregularity or impropriety in the adminiftration of the remedies, or to a want of perfeverance and fteadinefs in the practitioner or patient.* It is alfo proper to remark, that in thefe failures, the remedies were too feldom varied, fo that when one did not anfwer *immediately*, it was dropped, and mercury had recourfe to. Now we are confident, that much of our *uniform fuccefs* has been owing to the method, which was very early adopted, of changing the preparation, whenever it feemed to produce no further effect on the difeafe or conftitution. In this way, a number of cures were quickly obtained by the oxygenated muriate of pot-afh, &c. where the nitrous acid, &c. had not fo immediately fucceeded."

Effai

* Mr. Cruickfhank judicioufly varied the proportion, as well as the combination of this fubftance with calomel, &c. in different patients. Thus he directed, according to the circumftances of the cafe, and the greater or lefs degree of feverity manifefted by the difeafe in the conftitution of the patient, from 10 to 15 grains of the oxygenated muriate of pot-afh, four times a day; *with* or *without* the addition of *calomel*, from one to two grains daily—befides which he directed the faturnine lotion to be applied in thofe cafes which required this external aid; and his fuccefs has been fuch as might have been rationally expected from the fcientific and cautious prefcriber of thefe remedies.

Eſſai ſur les Fièvres intermittentes, &c. An Eſſay on intermitting Fevers, the Action and Uſe of Febrifuges, particularly the Peruvian Bark. By L. D. A. Bouffey, 8vo. 424 pp. (5 liv.) *Paris.* Croullebois.

The principles here laid down are ſtated with preciſion, and throw new light on this branch of human maladies. The character of fevers is conſidered under their different appearance, and the relative value of febrifuges aſcertained. Bark itſelf, ſo juſtly conſidered as the beſt febrifuge we know, but which is every day uſed in too empirical a manner, is here reduced to practical rules, ſuch as to make its exhibition more ſafe, and its ſucceſs more certain. The Author happily reconciles the chemical action of this medicine with its moſt ſenſible effects in the animal economy, and thence deduces practical rules for applying it with advantage.

Memoria di Luigi-Eustachio Polidori, *ſopro un tiſo contagiaſo, &c. Memoirs reſpecting the Cure of a contagious Typhus Fever lately prevalent in Tuſcany.* Piſa. 1798.

The method which the Author has ſucceſsfully practiſed in that diſorder is the ſubject of this memoir. The regimen he recommends, conſiſts in cordials, rich ſoups and broths, with toaſted bread, in ſmall quantities, but often repeated; muſtard to be added three or four times a day; that ſubſtance being, according to Callitzen, preferable in this caſe to the bark. The ordinary beverage ſhould be generous wine, in ſmall quantities, to be progreſſively increaſed, adding three or four times in the day the cardiac confection of the Edinburgh Pharmacopæia; at night a ſudorific bolus, with ten or twelve drops of laudanum in a glaſs of good wine; this doſe alſo to be gradually increaſed. Friction of the vertebræ, and likewiſe of the extremities, with the palm of the hand, applying the volatile liniment of the London Pharmacopæia; a frequent renovation of pure air, and ſprinkling the ſick chamber with vinegar, are recommended; and to abſtain as much as poſſible from the uſe of evacuating and debilitating remedies.—The Peruvian bark Dr. Polidori has uniformly found uſeleſs, and often hurtful; but he has not explained the cauſes which could have produced ſo ſingular an effect. In another part of his diſſertation he informs us, that he has not employed bliſters; being apprehenſive of too much evacuation. With every reſpect for the abilities of the Author, we cannot conſider this aſſertion as accurate or ſcientific. The experience we have had of the operation of this remedy, does not permit us to entertain a doubt, that it acts as an immediate ſtimulus; and as ſuch, Dr. Polidori might have preſcribed it with ſafety, and probably with benefit to his patients.

Oeuvres Medico-Chirurgales, &c. "*Medical and Chirurgical Eſſays, containing Obſervations and Diſſertations on different Subjects of Medicine and Surgery.*" By Collomb. 8vo. (6 liv. 10 ſols) *Paris.* Croullebois.

This is a work of great merit, and will form a valuable addition to a medical library. Among its important contents, are diſſertations on oſſification; on the lymph, cancer, gout, the organs of ſight; Miſs Stephens' medicine for diſſolving the ſtone in the bladder; on perſons born deaf and dumb; a number of details and obſervations on gravidity and delivery; on gun-ſhot wounds in the lungs; on cancer; on the uterine polypus; on the prolapſus uteri, and other objects deſerving the attention of the medical inquirer. It concludes with a ſhort treatiſe on venereal diſorders.

Medical Inquiries and Observations: Containing an Account of the Yellow Fever, as it appeared in Philadelphia in 1797; and Observations upon the Nature and Cure of the Gout and Hydrophobia. By Benjamin Rush, M.D. &c. Vol. V. *Philadelphia,* 8vo. 236 pp. 1798. Dobson.

After having furnished an accurate account of the weather and diseases which occurred during part of the year 1795, and the whole of the year 1796; commented upon the supposed connection between pestilential epidemics and the occurrence of earthquakes, the eruptions of volcanos, the appearance of comets, meteors, &c.; and sketched a continued analysis of the weather and diseases, from the close of his former work on this subject, to the beginning of the epidemic which appeared in 1797, the learned author proceeds to inform us, that no premonitory symptom was observed, except the tooth-ach, which obviously and remarkably preceded the attack of the fever in several cases.

The Doctor next enters into a detail of the symptoms of the Yellow Fever, as they appeared in the blood-vessels, in the excretions, in the nervous system, in the senses, in the lymphatic system, in the skin, and in the blood. Many interesting and valuable observations occur here; but the mode of treatment, in general, does not appear to have been very different from that pursued in the epidemics of 1793 and 1794. Mercury administered to such extent as to produce ptyalism, was not a little depended upon; and the author lost only two patients in whom this effect was not produced.

Observations on the Causes and Cure of Remitting Bilious Fevers. To which is annexed, an Abstract of the Opinions and Practice of different Authors; and an Appendix, exhibiting Facts and Reflections relative to the Synochus Icteroides, or Yellow Fever. By William Currie, M.D. &c. *Philadelphia,* 8vo. 227 pp. 1798. Palmer.

After some cursory remarks on the "Causes of Bilious Fevers," and on the diffusion of "febrile miasmata through the air," Dr. Currie enters into a more minute discussion of the two following interesting questions:

"1. Is the Bilious Fever, or any other variety of the Remitting Fever, occasioned by marsh-miasmata, or the exhalations from putrid or putrifying vegetables, ever contagious?

"2. And was the Yellow Fever, which occasioned such deplorable mortality in Philadelphia, in the summer of 1793, and which has appeared in other sea-port towns in the United States of America since that period, only a higher grade of the Bilious Fever, generated by the same causes?"—To both of these questions the Doctor gives a decided negative.

A Treatise on the Autumnal Endemial Epidemic of Tropical Climates, vulgarly called the Yellow Fever, &c. By J. B. Davidge, M.D. *Baltimore.* 8vo. 65 pp. 1798. Pechin.

Notwithstanding the inelegant and rather obscure manner of writing which pervades this treatise, the author evinces no inconsiderable share of sagacity, learning, and judicious reflection. When by habits of composition he shall have attained a proper degree of purity and perspicuity of language, we doubt not he will produce something at once creditable to himself, and useful to mankind.

Treatise on the Yellow Fever; shewing its Origin, Cure, and Prevention. By JOSEPH BROWNE. *New York.* 8vo. 31 pp. 1798. Argus-Office.

THIS author is one of those who undertake to analyse and indicate the precise state of the atmosphere necessary to produce the Yellow Fever, with other diseases of a similar nature and type. His general principle is, that this fever is produced by heat and a deficiency of oxygenous air, or, as he terms it, "*animal vital air*;" or a surcharge of azotic, or "*vegetable vital air*." He considers the atmosphere as being principally a chemical compound of these two airs, and "when any portion of atmospheric air comes in contact with any substance that has a greater affinity with either of its component parts, than these parts have for each other, a decomposition of this portion takes place, and a new union is formed."

Proceedings of the College of Physicians of Philadelphia, relative to the Prevention of the Introduction and Spreading of Contagious Diseases. PHILADELPHIA. 8vo. 37 pp. 1798. Dobson.

THIS little pamphlet comprises all the proceedings of the College, in respect to the importation of diseases, from Aug. 1793 to Aug. 1797, in a very convenient form; and moreover, exhibits the most essential parts of the various medical discussions which have taken place on this subject, since the first mentioned period, when the Yellow Fever broke out in Philadelphia.

An Inaugural Dissertation on Cynanche Trachealis, commonly called Croup, or Hives. By JOHN ARCHER, Junr. *Philadelphia.* 8vo. 46 pp. 1798, Way and Groff.

THE discovery of a remedy for so violent a disease, certainly merits to be circulated in the medical world, by the earliest and most extensive channels of communication. The author contends that the seneka root does not operate a cure, merely from its emetic and diaphoretic properties, as he has in some instances seen it produce a complete cure, without having had any effect as an emetic, diaphoretic, or cathartic. "Does it not then (he asks) cure cynanche trachealis chiefly by acting as a *local stimulant?*"—"I would not," he adds, "give an ounce of seneka as a chance in the cure of croup, for all the *emetic tartar, mercury,* and *cantharides* in the United States."

As we have already, under the head '*Medical and Physical Intelligence*,' p. 83, given a particular account of Dr. Archer's method of treating this malignant disease, we refer the reader to that useful and practical information.

POPULAR OR DOMESTIC MEDICINE.

Du Régime Diètetique, &c. "*Of Dietetic Regimen in the cure of Diseases.*" By C. J. TISSOT. *Strasbourg.* Koenig.

THIS treatise is divided into three principal sections, in each of which are to be found a number of sound and practical remarks on the most efficacious and least complicated methods of preserving health: in the first, the venerable and celebrated author has classed the usual articles of food and drink, according to their comparative salubrity: in the second, he lays down general rules

rules of diet, in reſpect to the temperament, ſex, habit, paſſions, and other circumſtances of the patient, the climate, ſeaſon, &c.: and in the third ſection the cauſes of thoſe diſeaſes, to which the dietetic rules chiefly apply, are traced and aſcertained with great learning and judgment.

Traité ſur la Manière d'élever ſainement les Enfans, &c. "*A Treatiſe on the method of rearing healthy children; founded on medical and philoſophical principles.*" By I. P. FRANK, Counſellor of State to the Emperor of Germany, Profeſſor of Chemiſtry at Vienna, &c. *Translated from the German,* by M. BOEHRER, Phyſician, at Paris.

This may be conſidered a valuable acceſſion to the various treatiſes lately publiſhed, in England and Germany, on the important ſubject of phyſical education. It is a truly *philoſophic,* benevolent, and ſpirited attempt to overcome and eradicate old-rooted prejudices. Although the author does not always condeſcend to preſent his readers with the moſt eaſy and familiar illuſtrations of the ſubjects in queſtion, we muſt nevertheleſs do him the juſtice to ſay, that in our opinion his treatiſe is not inferior in real merit and utility to the claſſical productions of UNZER, HUFELAND, CAMPE, CLAUDIUS, WURZER, &c.

Ueber die Erzishung und Behandlung dee Kiuder, &c. *On the Education and Management of Children, in the firſt years of their Life. A Manual for thoſe Mothers who are concerned in the health of their Offſpring, &c.* By Dr. C. A. STRUVE. 8vo. 286 pp. *Hanover.* Hahn.

In this popular treatiſe, the Author ſuggeſts many practical rules for the proper treatment of children, in the ſtate of infancy. He takes a comprehenſive view of all the exerciſes of children tending to promote their health; and as the ſtyle of Dr. Struve is throughout clear and inſtructive, and his work often entertaining, by the familiar and ſtriking illuſtrations with which it is interſperſed, readers deſirous of uſeful information, and particularly mothers, will be highly gratified in peruſing this excellent little treatiſe.

To render this performance in every reſpect worthy of the patronage of the guardians of youth, the induſtrious author has not only laid down general precepts for the moſt rational treatment of children, in a phyſical reſpect, but he has likewiſe with great accuracy pointed out the exceptions from theſe general rules, according to their different conſtitution, temperaments, and other circumſtances. Laſtly, the caſes in which the advice of a phyſician, or other medical aſſiſtance, becomes neceſſary, are fairly ſtated; and in a ſecond appendix, the amuſements moſt conducive to the health of children are critically examined and aſcertained.

THE VETERINARY ART.

Le parfait Bouvier, &c. *The complete Herdsman.* By BOUTROLLE. 12mo. *Paris.* Huzard.

This is a new edition, with conſiderable improvements, of a very uſeful and well written work on the management of cattle; their age; their maladies; and the beſt methods of cure. To the preſent edition are added, two ſmall treatiſes, of conſiderable merit, on ſheep and hogs, together with ſome new medicines for horſes.

Inſtructions ſur les moyen les plus propres à aſſurer la propagation des bêtes à laine de race d'Eſpagne, &c. "*Directions reſpecting the moſt proper Means of promoting the Propagation of the Sheep affording Spaniſh Wool, and the Preſervation of their Breed in its Purity,*" publiſhed by the Council of Agriculture, and editedby GILBERT, 8vo. (30 ſols) *Paris,* Bureau du Nouvelliſte

Nouvelliſte. *Inſtructions ſur le claveau des moutons.*" Advice on the Rot in Sheep." 8vo. (20 ſols) *Paris.* Ibid.

Theſe two practical works we have placed together; as they deſerve to be jointly recommended to the attention of all who are intereſted in improving this valuable branch of rural œconomy. The Britiſh farmer and grazier could not be treated with a more uſeful and acceptable preſent, than the tranſlation of theſe little volumes into the Engliſh language.

MISCELLANIES.

An Experimental Diſſertation on the Rhus Vernex, Rhus Radicans, and Rhus Glabrum, commonly known in Pennſylvania by the names of Poiſon-aſh, Poiſon-vine, and common Sumach. By THOMAS HORSFIELD of Bethlehem &c. *Philadelphia,* 8vo. 88 pp. 1798. Ciſt.

The botanical and chemical knowledge diſplayed in this performance, ſhews uncommon accuracy and depth of reſearch in the author. The plants deſcribed are all natives of New-York, as well as the Rhus Toxicodendron mentioned afterwards. Mr. Horsfield gives a minute deſcription of the three ſpecies of Sumach, in the courſe of which he examines, whether the Rhus vernex, or Swamp Sumach, be the varniſh-tree of Japan, deſcribed by Kempſer, and gives his opinion, that they are certainly the ſame plant.

The experiments detailed (p. 50-60) on the Rhus Glabrum, or common Sumach, tend to eſtabliſh the following facts: That the ſaline concretion on the berries is a tartrite of pot-aſh; that the gallic acid exiſts plentifully both in the capſules and leaves, but in the latter it is in a ſtate more fit for economical purpoſes; that it may be advantageouſly applied to the dying of black, and the manufacture of ink, to prevent the neceſſity of importing foreign galls, and that its leaves may be ſubſtituted for oak-bark in tanning; diſcoveries which may be very valuable to the citizens of the American ſtates. The leaves and ſtorks of the common ſumach are already much uſed in New York, in preparing ſheep and goat ſkins, for what is called Morocco leather.

The remaining experiments related in this ſection, partly refer to the tartarous, acetous, and oxalic acids afforded by the rhus glabrum, with ſpeculations on their convertibility into each other. After ſome further experiments and remarks on the black, yellow, and fawn colours, produced by the ſpecies of rhus, Mr. Horsfield gives an analyſis of the vernex and radicans, and concludes with ſome obſervations on the medical properties of the latter, as an incitant and diuretic remedy of moderate efficacy, when infuſed in water, and taken internally: he recommends the external application of both, in certain ſtages of mania, melancholy, pulmonary conſumption, epilepſy, palſy, and other chronic diſeaſes, which have long reſiſted the efforts of very powerful medicines.

Bibliotheque phyſico-economique, &c. The phyſico-economical Library, the 16th Year, containing Memoirs, Obſervations, and Practice in rural Economy, the moſt intereſting new Diſcoveries in the uſeful and amuſing Arts; together with Deſcriptions of new Machines and Inſtruments employed in the ſame: edited by Citizens PARMENTIER and DEYEUX, 12mo. 400 pages. (2 liv. 12 ſols.) *Paris.* Buiſſon.

We obſerve with pleaſure the continuation of this uſeful work. Among a number of intereſting articles on agriculture, rural and domeſtic economy, manufactures, ſciences, and uſeful arts, the preſent volume contains the following :- " On the wheat with red ears, without beards, white grains, and a hollow ſtalk; by Teſſier—on the danger of bathing in running water, by Bablot, and on Tokay wine by the Right Honourable Silveſter Douglas.

Memoires

Memoires presentant les Bases d'une nouvelle Théorie Physique et Chymique, &c. Memoirs presenting the Basis of a new Theory of Chemistry and Natural Philosophy, founded upon the Consideration of the essential Particles of compound Matter, and upon that of the three principal States of Fire in Nature: intended as an Exposition of the Work, intitled, A Refutation of the Pneumatic Theory." By J. B. Lamark, 8vo. with ten Plates, exhibiting the new Classification of Animals and Minerals, and the natural Order of Colours, (6 liv.) *Paris*. Maradan.

These memoirs exhibit a *new theory of chemistry*, the principles of which, every where closely connected, and fruitful in conclusions, *appear* to furnish the solution of all known facts. The principal objects of the doctrine here explained, aims at determining the constituent parts of any compound body, as existing in the essential particles of the compound, and not in the mass of matter itself. The knowledge of such essential particles, and of the peculiarities relative thereto, forms the principal part of the studies and researches of the chemist, from which he can never deviate, without exposing himself to the errors that attend all reasonings which are supported only by arbitrary hypotheses.

This work also offers a *theory of fire*, altogether new, founded on an analysis of its principal existence of nature; its influence on bodies; the production of colour, combustion, or taste, according to their different states of combination. The Author farther endeavours to apply the general principles of physics to the purpose of explaining the phenomena occurring in living bodies, as well as the origin and formation of minerals.

Chemische und Pharmaceutische Abhandlungen, &c. "Chemical and Pharmaceutical Essays, partly relative to medical jurisprudence, with a Treatise on Natural History. Translated from the Italian, and accompanied with Remarks: by I. A. Schmidt, M. D. 8vo. 264 pp. with two plates, *Leipzig*, Schwickert.

These Essays possess considerable merit, on account of the sound reasoning, as well as the pertinent observations and experiments in which they abound. They well deserve to be translated. Our readers will be able, in some degree, to judge of their value from a general specification of their contents. 1. On the pernicious tendency of tinned copper vessels, used for culinary purposes. 2. On the necessity of keeping such vessels thoroughly clean, and the danger to families and to society at large, from the neglect of this precautionary duty. 3. Remarks on the preparation of the dulcified spirit of nitre. 4. An analysis of the production obtained by the decomposition of Sal-ammoniac. 5. Of the preparation of vitriolic æther, and the anodyne liquor of Hoffman. 6. An analytical account of the dulcified spirit of vitriol *(oleum vini.)* 7. An expeditious process of preparing phlogisticated alkali. 8. An historico-chemical essay on the former police of the City of Milan, with respect to the tan-works there established. 9. On the distilled oil of tartar. 10 A new process of preparing the kermes mineral. 11. On the properties of the oil of laurel, and its affinity to alkohol, æther, &c. 12. An improved Papin's digester, adapted to domestic and pharmaceutical uses; and, 13 An account of a remarkable stone, of an almost spherical shape, measuring three inches nine lines in diameter, and weighing thirty-one ounces, found in the stomach of a horse, that died suddenly; and which concretion, from the imperfect analysis given by the author, we only learn, consisted of a great proportion of earth and oil.

Upon

Upon the whole, this collection is tolerably well written, and contains much interesting matter; but we regret that it is not so instructive as such a work might have been, had the author possessed a more accurate acquaintance with chemistry.

Recueil des Actes de la Société de Santé de Lyon, &c. The Transactions of the Society of Health at Lyons, from the first to the fifth year of the French Republic; or, Memoirs and Observations on different subjects of Surgery, Medicine, and Natural History. (5 liv. 10 sols) *Paris.* Perisse.

This collection, besides the light it throws on the general practice of medicine, contains a number of novel observations in that extensive science, as well as new facts relative to the animal economy, and Natural History. There are annexed, two posthumous works of the celebrated Lecat, and Observations on Surgery by David of Rouen.

*** *Want of room obliges us to defer the Review of the following new books until the next Number.*

Memoirs of the Yellow Fever, which prevailed in Philadelphia and other Parts of the United States of America, in the summer and autumn of 1798: by WILLIAM CURRIE, S. C. M. P. 8vo. 144 pp. Philadelphia. Dobson. 1798.

An outline of the history and cure of the fever, epidemic and contagious, more expressly the contagious fever of jails, ships, and hospitals, the concentrated endemic, vulgarly called the yellow fever of the West Indies; to which is added, an explanation of the principles of military discipline and œconomy, with a scheme of medical arrangement for armies, by ROBERT JACKSON, M. D. 8vo. 396 pp. Edinburgh. Mundell, 1789.

An account of the Plague which raged at Moscow, in 1771; by CHARLES DE MERTENS, M. D. Translated from the French, with notes, 8vo. 122 pp. London. Rivington, 1799.

A new Inquiry into the suspension of vital action, in cases of Drowning and Suffocation. The third edition. To which are now added, A Preservative Plan, or Hints for the preservation of persons exposed to those Accidents which suddenly suspend or extinguish vital Action: by A. FOTHERGILL, M. D. F. R. S. 8vo. 189 pp. and 43. price 4s. London. Rivington. N. B. The "*Preservative Plan,*" now first published, may be had separately, price 1s. 6d.

MONTHLY REPORTS OF DISEASES.

The diseases admitted as in and out Patients at the Westminster Hospital, between Jan. 20, and Feb. 20, 1799.

ACUTE DISEASES.		Cephalæa	2
Bilious Fever	4	Chronic Rheumatism	7
Typhus	2	Colic	2
Pneumonia	3	Diarrhœa	4
Acute Rheumatism	2	Dyspepsia	2
CHRONIC DISEASES.		Dysuria	2
Amenorrhœa	2	Enterodynia	2
Anasarca	3	Hooping Cough	4
Ascites	2	Hysteria	1
Asthenia	4	Hydrocephalus	1
Catarrh	3	Hydrops-ovari	1

Hydro-

Hydrothorax	1	Struma	2
Impetigo	2	Worms	2
Paralysis	1	PERIODIC DISEASES.	
Phthisis	4	Intermittents	2
Pleurodynia	1		

Account of Diseases in an Eastern District of London, from the 20th of January to the 20th of February, 1799.

ACUTE DISEASES.		Fluor Albus	3
Typhus Mitior	2	Enterodynia	2
Pleurisy	4	Diarrhœa	4
Peripneumony	5	Dyspepsia	6
Peripneumonia-notha	12	Obstipatio	3
Small-pox	6	Gastrodynia	2
Acute Rheumatism	3	Colica Pictonum	1
CHRONIC DISEASES.		Dysuria	3
Dyspnœa	15	Hæmorrhois	1
Cough	25	Hernia	1
Cough and Dyspnœa	17	Jaundice	2
Hoarseness	6	Erysipelas	1
Phthisis Pulmonalis	4	Paralysis	2
Hæmoptoe	3	Hypochondriasis	4
Ascites	1	Chronic Rheumatism	20
Hydrops Pectoris	3	PUERPERAL DISEASES.	
Anasarca	2	Ephemera	3
Cephalalgia	5	Peritonitis	1
Vertigo	2	Menorrhagia Lochialis	2
Opthalmia	3	INFANTILE DISEASES.	
Epistaxis	1	Aphthæ	3
Menorrhagia Difficilis	3	Opthalmia	2
Amenorrhœa	3	Herpetic Eruptions	1
Chlorosis	4	Vermes	2

The severe degree and long continuance of cold, has been productive of different diseases affecting the pulmonary system.

Coughs, dyspnœa, catarrh, and peripneumony, have prevailed in an uncommon degree. The last of these diseases, particularly that species of it which is called peripneumonia-notha has been severely felt by many persons in the decline of life; and to a great number it has proved fatal.

This disease sometimes approaches in a very insidious manner; and in those patients who have long been subject to catarrhal affections it does not excite much alarm, and on that account is neglected, till it assume a formidable aspect. In addition to the common symptoms of catarrh, frequently a greater or less degree of permanent inflammation serves to characterise the disease.

A sense of weight about the præcordia, with a difficulty of breathing, first announces the approach of this disease; respiration is performed rather with *difficulty* than with *pain*; or if pain is occasioned, it is rather of the obtuse than of the acute kind. The cough at the beginning is dry and hard; but afterwards a quantity of mucus, of various colour and consistence, is thrown up. A continuance of this expectoration with an abatement of other symptoms forms a favourable prognosis, respecting the termination of the disease. The pulse is frequently weak and irregular. In some instances, considerable pain is felt in the head; a bloated

bloated countenance, and livid appearance about the cheeks and lips, indicate a difficult return of blood from the head. In the early ſtage of this diſeaſe, antimonial preparations are more proper than thoſe expectorants which are more heating and ſtimulating: and when accompanied with mild diluting drink, they promote a gentle diaphoreſis. Bliſters often afford an alleviation of ſymptoms, eſpecially when pain in the ſide, or in any part of the cheſt, becomes urgent. In one of the patients referred to in the foregoing liſt, this ſymptom was ſo urgent as to render it neceſſary to take away a few ounces of blood, by which means, together with the application of a bliſter to the part affected, conſiderable relief was obtained. In advanced ſtages of the diſeaſe, the different preparations of ſquills, and ſometimes the lac ammoniacum, prove very uſeful expectorants, and promote a favourable termination of the diſeaſe.

Liſt of Diſeaſes from the 1ſt of January to the 10th of February, 1799: being the Reſult of the public and private Practice of a Phyſician at the Weſt End of London.

ACUTE OR FEBRILE DISEASES.	
Catarrh	33
Peritoneal Inflammation	1
Acute Rheumatiſm	29
Ophthalmia	4
Inflammatory Sore-throat	4
Ulcerated, or ſpecky Sore-throat	6
Scarlatina Anginoſa	5
Meaſles	3
Small-pox	4
Hooping-cough	7
Malignant Fever	5
Slow Fever	4
Hectica	3
Child-bed and Milk Fever	4
Acute Diſeaſes of Infants	12
Quotidian	2
CHRONIC DISEASES.	
Cough and Dyſpnœa	86
Pulmonary Conſumption	17
Spitting of Blood	5
Epiſtaxis	2
Chronic Rheumatiſm	6
Rheumatic Tooth-ach	4
Sciatica	3
Dropſy	7
Aſthenia	19
Cephalæa and Vertigo	17
Syncope	1
Palſy	6
Chorea Sancti Viti	2
Epilepſy	1
Hyſteria	2
Palpitatio	3
Hydrocephalus	1
Dyſpepſia	15
Gaſtrodynia	8
Hæmorrhoids	2
Enterodynia	10
Diarrhœa	10
Colica Pictonum	2
Hernia	2
Gravel	3
Enureſis	2
Hæmaturia	1
Iſchuria	4
Menorrhagia	5
Chloroſis and Amenorrhœa	5
Fluor Albus	2
Scirrhus Uteri	1
Scirrhus Hepatis	2
Scrophula	8
Contractura	1
Tabes Meſenterica	2
Worms	6
Dentition	3
Thruſh	4
Papulous Eruptions on the Skin	3
Lepra	1
Scaly Tetter	3
Prurigo	1
Itch	4
Scalded Head	6
Ecthyma	3
Impetigo	1
Shingles	1
Pemphigus Infantilis	1
Erythema	2
Gutta Roſea	2

N. B. Communications ſhould come to hand as early as poſſible, before the 12th of the Month.